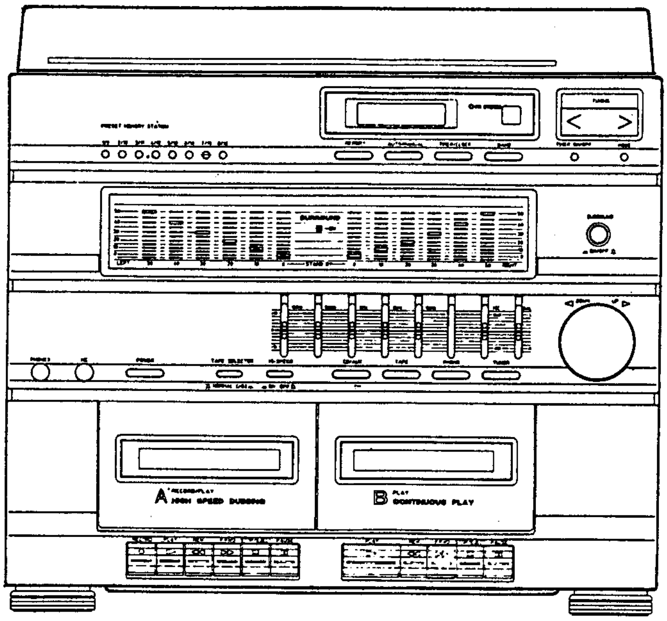
SAMSUNG

SERVICE MANUAL

VIP - 690

STEREO DOUBLE DECK MUSIC CENTER



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1. SPECIFICATIONS

- **LW SECTION** (This section is applied only to LW band)

USABLE SENSITIVITY	1000 µV
S/N RATIO	38 dB
IMAGE REJECTION	35 dB
IF REJECTION	30 dB
SPURIOUS RESPONSE	35 dB

- **MW(AM) SECTION**

USABLE SENSITIVITY	800 µV
SELECTIVITY	25 dB
IMAGE REJECTION	35 dB
IF REJECTION	35 dB
S/N RATIO	35 dB
TOTAL HARMONIC DISTORTION	1.5%
OVERLOAD	6%
DISTORTION AUDIO FIDELITY	80-1800Hz
A.G.C	40 dB

- **FM SECTION**

USABLE SENSITIVITY	7 µV
IF REJECTION	50 dB
IMAGE REJECTION	30 dB
S/N RATIO	50 dB
TOTAL HARMONIC DISTORTION	0.8%
AUDIO FIDELITY (+2 dB)	60-10,000Hz
AM SUPPRESSION	40 dB
SEPARATION (1KHz)	30 dB

- **TAPE SECTION**

(a) PLAYBACK	
FREQUENCY RESPONSE	125-8,000Hz
S/N RATIO	45 dB
SEPARATION	35 dB
CROSSTALK	35 dB
(b) RECORD/PLAYBACK	
FREQUENCY	125-6,300Hz
S/N RATIO	40 dB
SEPARATION	35 dB
CROSSTALK	35 dB
ERASING EFFECT	50 dB

- **AUDIO SECTION**

OUTPUT POWER (4 OHM) (THD 10%)	15 WATTS
EQ CONTROL (5 BAND) (100Hz, 300Hz, 1KHz, 3KHz, 10KHz)	±6.5 dB
CHANNEL SEPARATION	40 dB
MINIMUM HUM WITH CCIR FILTER	0.5mV

- **TURN TABLE SECTION**

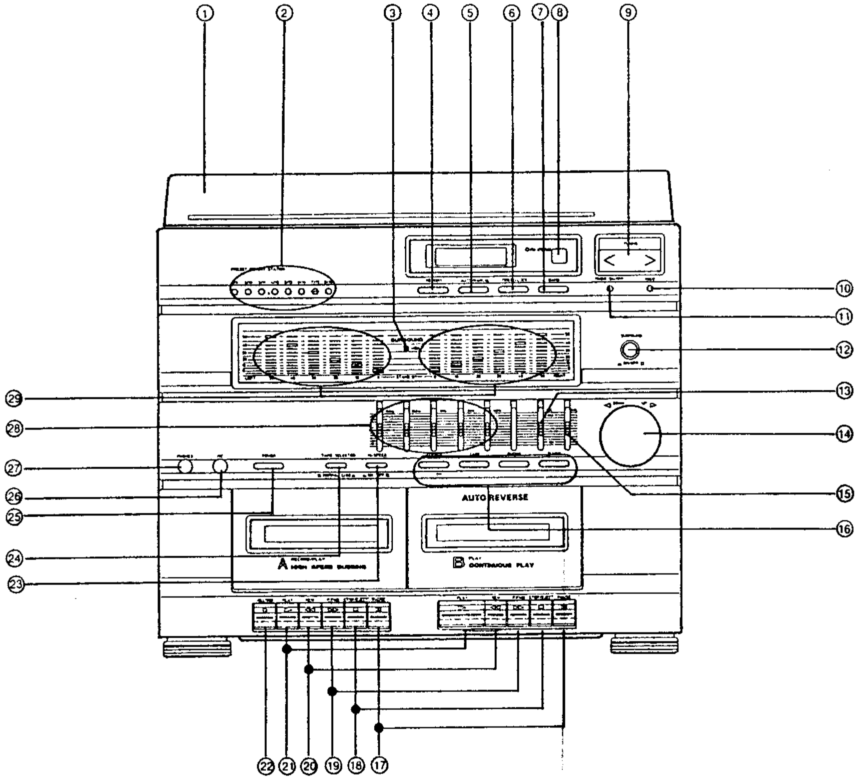
CARTRIDGE	CERAMIC TYPE
SPEED	33 1/3, 45 RPM

NOTE :

- Be sure to use identical and standardized replacement parts, especially for critical parts in the unit since many parts in the unit have special safety characteristics marked by ⚠ in the schematic diagram.
- Avoid repairing the set near TV or any other magnetic forces.

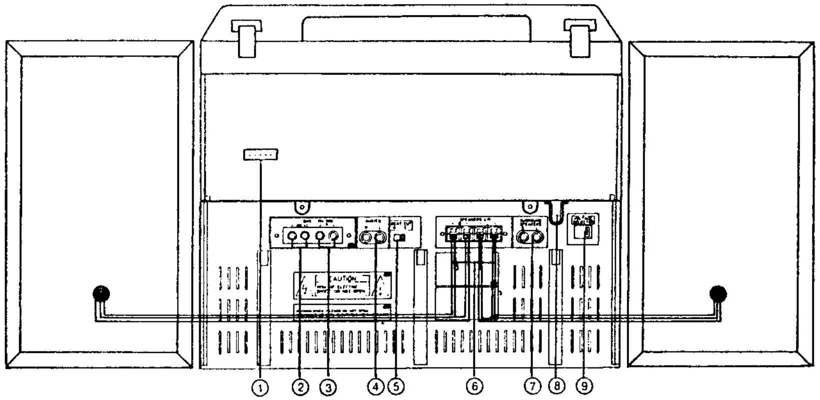
2. LOCATION AND FUNCTION

2-1. FRONT



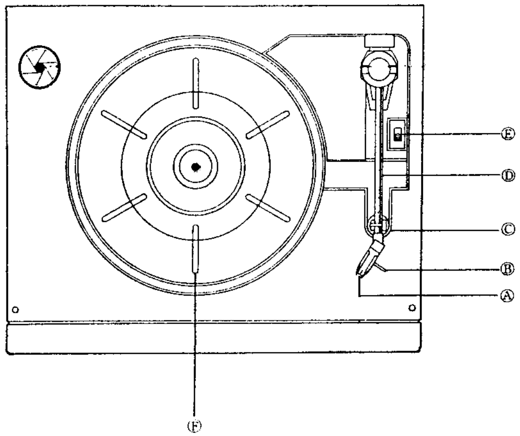
1. DUST COVER
2. PRESET STATION BUTTON (1/9 - 8/16)
3. SURROUND INDICATOR
4. MEMORY BUTTON
5. TUNING AUTO/MANUAL SELECTOR BUTTON
6. TIMER/CLOCK BUTTON
7. BAND SELECTOR BUTTON
8. REMOTE CONTROL SIGNAL SENSOR
9. TUNING UP/DOWN BUTTON (HOUR, MIN)
10. MODE BUTTON
11. TIMER ON/OFF BUTTON
12. SURROUND BUTTON
13. MIC MIXING VOLUME
14. VOLUME
15. BALANCE
16. FUNCTION BUTTON
17. PAUSE BUTTON (▯▯)
18. STOP/EJECT BUTTON (□)
19. FAST FORWARD BUTTON (▷▷)
20. REWIND BUTTON (◁◁)
21. PLAY BUTTON (▷)
22. RECORD BUTTON (○)
23. HIGH SPEED DUBBING BUTTON
24. TAPE SELECTOR BUTTON
25. POWER BUTTON
26. MIC JACK
27. HEADPHONE JACK
28. 5 BAND GRAPHIC EQUALIZER
29. LEVEL DISPLAY

2-2. REAR



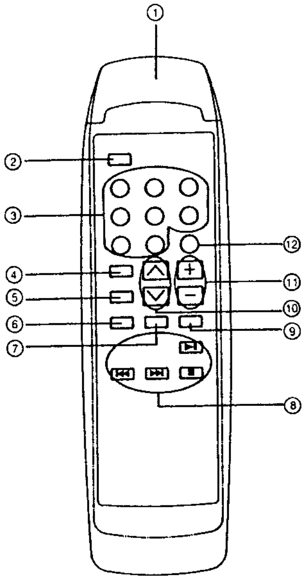
1. CD REMOTE CONTROL JACK (OPTION)
2. AM(MW, LW) ANTENNA TERMINAL
3. FM ANTENNA TERMINAL
4. CD/AUX INPUT JACK
5. BEAT CUT SWITCH
   (LW REGION ONLY)
6. SPEAKER TERMINAL
7. SURROUND SPEAKER TERMINAL
8. POWER CORD
9. VOLTAGE SELECTOR SWITCH
   (2 VOLTAGE REGION ONLY)

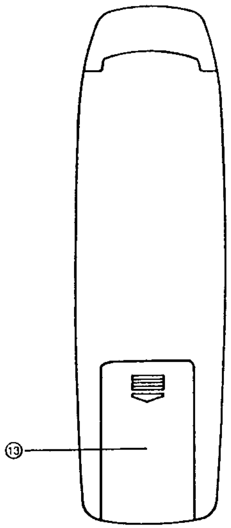
2-3. TURN TABLE



A. STYLUS PROTECTOR
B. HEAD SHELL
C. ARM-REST
   The arm rest supports the tone arm. When you are not playing a record, keep the tone arm in the rest.
D. TONE ARM
E. SPEED SELECTOR
   Either of two speeds, 33-1/3 rpm or 45 rpm can be selected with this switch.
F. PLATTER

2-4. REMOTE CONTROLLER

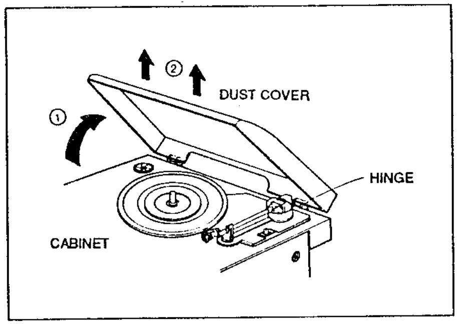




1. INFRARED TRANSMIT WINDOW.
2. POWER BUTTON.
3. PRESET STATION BUTTONS (1/9 - 8/16).
4. MEMORY BUTTON (TUNER, CLOCK , TIMER).
5. AUTO TUNING BUTTON (AUTO/MANUAL).
6. BAND BUTTON: 2 BAND REGION - FM/AM
   3 BAND REGION - FW/MW/LW, FM/SW/MW.
7. PRESET SCAN BUTTON.
8. CD CONTROL BUTTON (OPTION).
9. SLEEP BUTTON.
10. TUNING UP/DOWN BUTTON: (V) BUTTON - DOWN, (Λ) BUTTON - UP.
11. VOLUME UP/DOWN BUTTON: (—) BUTTON - DOWN, (+) BUTTON - UP.
12. TIMER/CLOCK BUTTON.
13. BATTERY COVER.

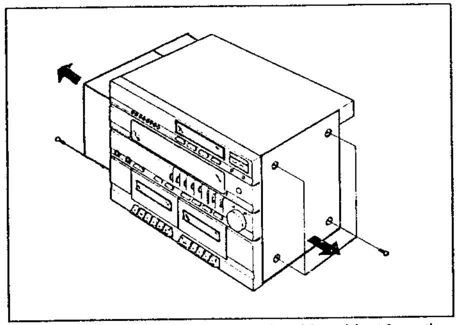
3. DISASSEMBLY

1. DISASSEMBLY OF DUST COVER



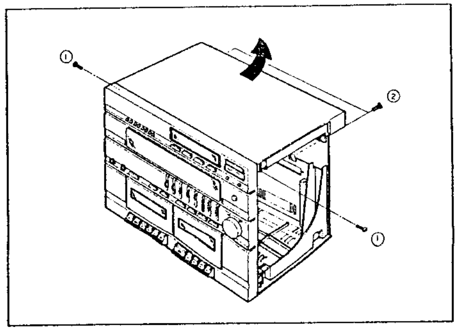
1) Open the dust cover.(DIRECTION ①)
2) Pull up with force in the direction of the arrow and remove the dust cover from the HINGES. (DIRECTION ②)

2. SIDE CABINET



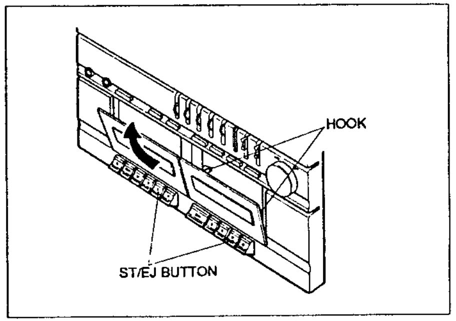
1) Remove the 8 screws holding the side cabinet/from the side cabinet.
2) Pull out in the direction of the arrow.

3 .TURN TABLE



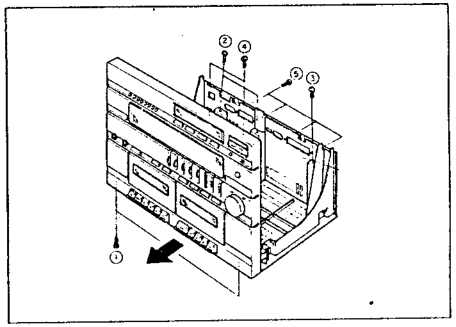
1) Remove 2 screws (①).
2) Remove 2 screws (②) fixing the back of unit.
3) Pull the turn table up in the direction of the arrow.

4. CASSETTE DOOR



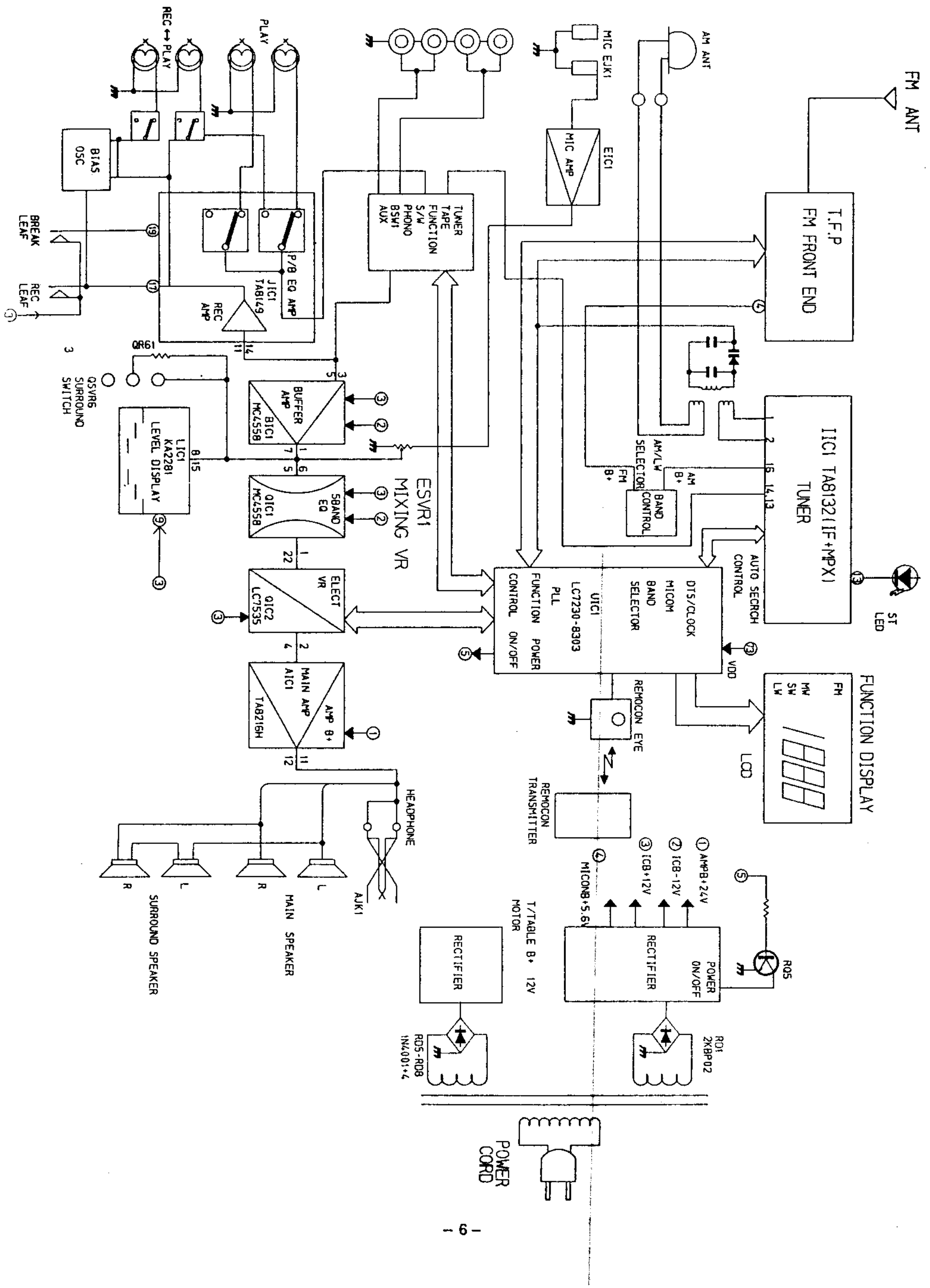
1) Press the ST/EJ button to open the door.
2) Push the door stopping hook inward to open the door fully.
3) Pull the door out with force in the direction of the arrow.

5. FRONT CABINET



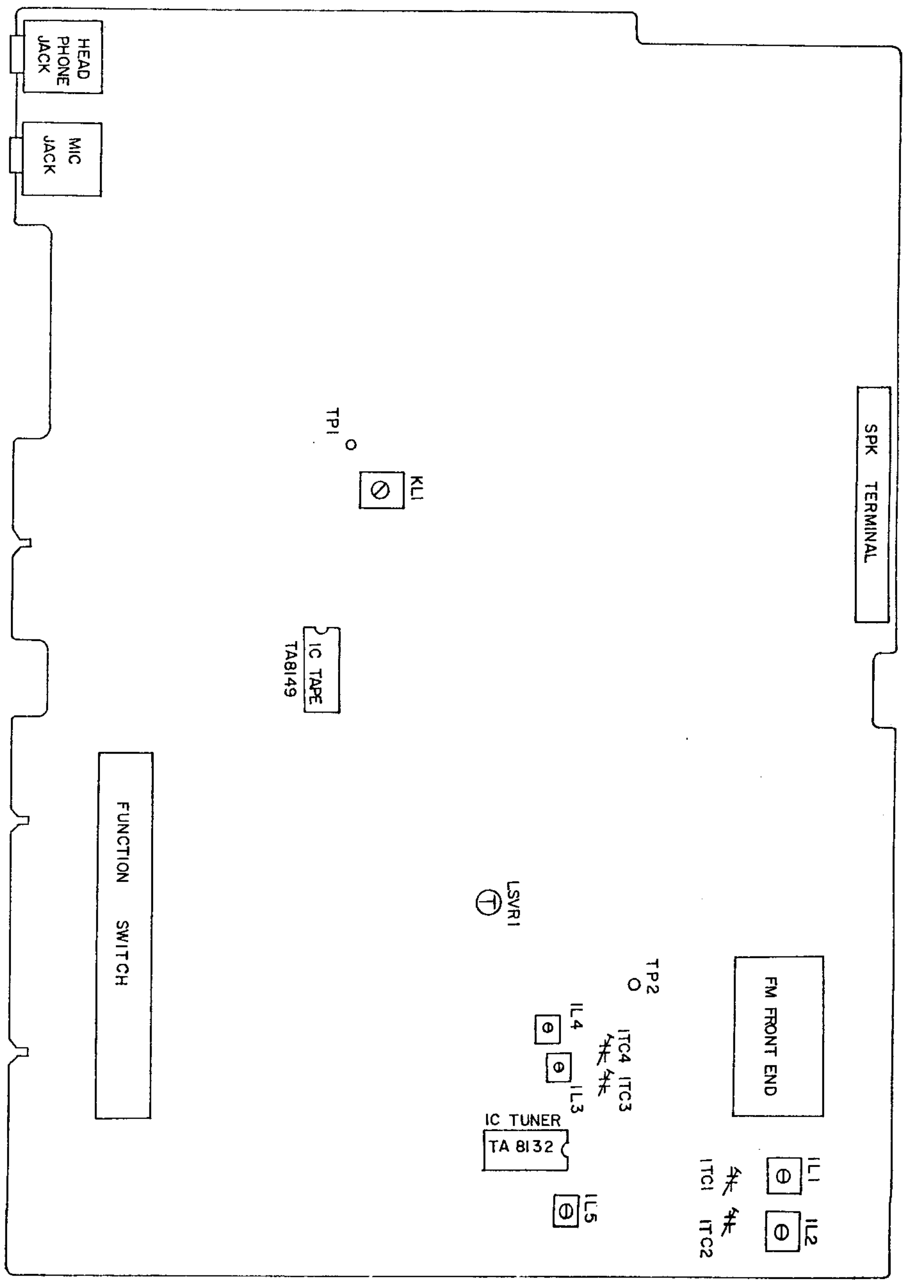
1) Remove the screws (① , ② , and ③).
2) Remove the 2 screws (④) fixing on the heat-sink.
3) Remove the 4 screws (⑤) from the Jack.
4) Hold the front cabinet and pull in a direction of the arrow.

4. BLOCK DIAGRAM



REC ↔ PLAY
PLAY
BIAS OSC
BREAK LEAF
REC LEAF
P/B EQ AMP
JIC1 TA8149
REC AMP
QR61
QSVR6 SURROUND SWITCH
LIC1 KA2281 LEVEL DISPLAY
BUFFER AMP BIC1 MC4558
5BAND EQ QIC1 MC4558
ESVR1 MIXING VR
ELECT VR QIC2 LC7535
MAIN AMP AIC1 TA8216H
AMP B+
HEADPHONE
AJK1
SURROUND SPEAKER
MAIN SPEAKER
TUNER TAPE FUNCTION S/W PHONO BSW1 AUX
MIC EJK1
MIC AMP
EIC1
AM ANT
FM ANT
T.F.P FM FRONT END
IIC1 TA8132(IF+MPX)TUNER
AM/LW SELECTOR
FM B+
AM B+
BAND CONTROL
AUTO SECRCH CONTROL
ST LED
DTS/CLOCK MICOM BAND SELECTOR
UIC1 LC7230-8303 PLL
FUNCTION CONTROL
POWER ON/OFF
VDD
REMOCON EYE
REMOCON TRANSMITTER
FUNCTION DISPLAY
FM MW SW LW
LCD
① AMPB+24V
② ICB-12V
③ ICB+12V
④ MICONB+5.6V
T/TABLE B+ 12V MOTOR
RECTIFIER
POWER ON/OFF
RD5
RD5-RD8 1N4001×4
RD1 2KBP02
POWER CORD

5. ALIGNMENT POINT LOCATION



HEAD PHONE JACK
MIC JACK
SPK TERMINAL
TP1
KL1
IC TAPE TA8149
FUNCTION SWITCH
LSVR1
TP2
IL4
ITC4
ITC3
IL3
FM FRONT END
IC TUNER
TA 8132
IL5
ITC1
IL1
ITC2
IL2

6. ALIGNMENT PROCEDURE

6-1. TUNER SECTION

A. MW (AM) IF ADJUSTMENT [FIG. 1]

STEP	SIGNAL SOURCE/ CONNECT TO	SET SIGNAL TO	ALIGNMENT INDICATOR CONNECT TO	SET TUNING TO	ADJUST	ADJUST FOR
1	AM SIGNAL GEN AM LOOP ANT	450KHz	OSCILLOSCOPE AM DET.OUTPUT OR SPEAKER TERMINAL	522KHz (MW) 530KHz (AM)	IL5	MAXIMUM

B. MW (AM) RF ADJUSTMENT [FIG. 1]

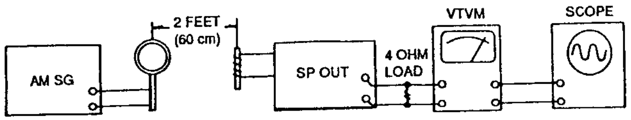
STEP	SIGNAL SOURCE/ CONNECT TO	SET SIGNAL TO	ALIGNMENT INDICATOR CONNECT TO	SET TUNING TO	ADJUST	ADJUST FOR
1	NOT USED	NOT USED	DIGITAL DC VOLT METER TEST POINT TP2	522KHz (MW) 530KHz (AM) (LOW END)	IL3 (AM OSC COIL)	0.9V ± 0.05 (MW) 1.0V ± 0.05 (AM)
2	NOT USED	NOT USED	DIGITAL DC VOLT METER TEST POINT TP2	1611 KHz (MW) 1610 KHz (AM) (HIGH END)	ITC2 (AM OSC TRIMMER)	0.9V ± 0.05 (MW)
3	REPEAT STEPS 1 AND 2 TO OBTAIN BEST FREQUENCY RANGE.					
4	AM SIGNAL GEN. AM LOOP ANT.	603KHz (MW) 600KHz (AM) (MODULATED)	AM DET. OUTPUT OR SPEAKER TERMINAL	603KHz (MW) 600KHz (AM)	IL 2 (AM ANT. COIL)	MAXIMUM GAIN
5	AM SIGNAL GEN. AM LOOP ANT.	1404KHz (MW) 1400KHz (AM) (MODULATED)	AM DET.OUTPUT OR SPEAKER TERMINAL	1404KHz (MW) 1400KHz (AM)	ITC2 (AM ANT. TRIMMER)	MAXIMUM GAIN
6	REPEAT STEPS 4 AND 5 TO MINIMIZE TRACKING ERROR AND ALSO REPEAT STEP 3 IF NECESSARY.					

C. LW RF ADJUSTMENT [FIG. 1]

STEP	SIGNAL SOURCE/ CONNECT TO	SET SIGNAL TO	ALIGNMENT INDICATOR CONNECT TO	SET TUNING TO	ADJUST	ADJUST FOR
1	NOT USED	NOT USED	DIGITAL DC VOLT METER TEST POINT TP2	146KHz (LOW END)	IL4 (LW OSC COIL)	1.2V ± 0.05
2	NOT USED	NOT USED	DIGITAL DC VOLT METER TEST POINT TP2	290KHZ (HIGH END)	ITC4 (LW OSC TRIMMER)	5.2V ± 0.05
3	REPEAT STEPS 1 AND 2 TO OBTAIN BEST FREQUENCY RANGE.					
4	AM SIGNAL GEN. AM LOOP ANT.	155KHz (MODULATED)	VTVM AM DET. OUTPUT OR SPEAKER TERMINAL	155KHz	IL1 (LW ANT. COIL)	MAXIMUM GAIN
5	AM SIGNAL GEN. AM LOOP ANT.	272KHz (MODULATED)	VTVM AM DET.. OUTPUT OR SPEAKER TERMINAL	272KHz	ITC1 (LW ANT. TRIMMER)	MAXIMUM GAIN
6	REPEAT STEPS 4 AND 5 TO MINIMIZE TRACKING ERROR AND ALSO REPEAT STEP 3 IF NECESSARY.					

D. FM LOW COVER ADJUSTMENT

STEP	SIGNAL SOURCE/ CONNECT TO	SET SIGNAL TO	ALIGNMENT INDICATOR CONNECT TO	SET TUNING TO	ADJUST	ADJUST FOR
1	NOT USED	NOT USED	DIGITAL DC TP2 VOLTMETER	87.5MHz (3BAND) 87.9MHz (2BAND)		1.5V ± 0.05 (3 BAND) 1.6 ± 0.05 (2 BAND)



- No adjustment is required for FM IF, RF or STEREO.

6-2. DECK SECTION

A. TAPE SPEED ADJUSTMENT

1) Connect the frequency counter to speaker output terminal.
2) Press high speed button.
3) Playback a 3KHz test tape.
4) Adjust semifixed resister (JSVRI) for frequency counter indicated 3KHz.

B. HEAD HEIGHT/AZIMUTH ADJUSTMENT

1) PURPOSE

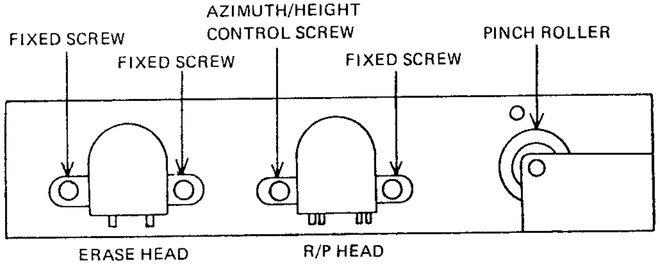
The purpose of this adjustment is to obtain good frequency response and to improve channel balance by adjusting head to the properest position.

2) METHOD

The head height/azimuth adjustment screw is located on the left side of r/p head (see figure). Before adjusting, semi-fixed resistor should be located at the maximum position.

3) ADJUST HEAD AS FOLLOWS

A) Connect 2CH voltmeter and/or oscilloscope to the tape output terminal of both R and L channel.
B) Play 10KHz azimuth test tape.
C) With a screw driver turn adjustment screw slowly for the maximum output of left channel and at the same time also for the same phase of both channel.
D) Seal adjustment screw with glyptal or other similar non-hardening cement.



(FRONT VIEW)

C. BIAS FREQUENCY ADJUSTMENT

1) PURPOSE

Purpose of this adjustment is to obtain stable frequency response, good erasing effect and low distortion by keeping constant bias frequency and oscillating frequency.

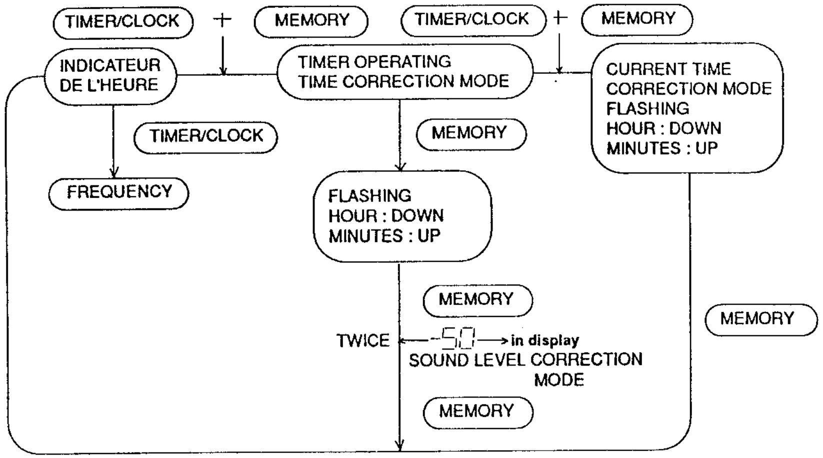
2) METHOD

A) Press record button.
B) Input signal is not necessary for this adjustment.
C) Connect Frequency Counter to TP1 and Ground.
D) Adjust "KL1" for reading of 85KHz on the frequency counter.

7. TROUBLE SHOOTING

1. FREQUENCY and CLOCK conversion not working.
   1) Check the voltage in the base of IQ11, IQ12.
   2) Check if the base of UQ1 UQ2 is high.
2. Popping noise when operating key: Check if IQ10 is defective.
3. STANDBY in LED when power is OFF: Check RD16 SHORT
4. SIDE LAMP is lit when power is off.: Check RQ5 SHORT
5. No audio through the speaker while "signal" is shown in LED: RQ3 defective.
6. Deck motor rotates cotinuously even if power is off: Check A709 SHORT
7. Turn table inopertive: Check if the base of PQ1 is high.
8. FM/AM not conversive: 1. Check pin 16 AM: 5.4V
   FM: 4.5V
   2. Check base (low) L: FM
   H: AM
9. FM inoperative: Check if pin 4 of Vcc is 11V.
   Check FQ1 base of Vcc.
10. DECK B not working: Check if pin 19 of JIC1 TA8149 is high (10V)
    Check if pin 18 of Vcc is high (11V).

8. TIMER FUNCTION


TIMER/CLOCK + MEMORY
TIMER/CLOCK + MEMORY
INDICATEUR DE L'HEURE
TIMER OPERATING TIME CORRECTION MODE
CURRENT TIME CORRECTION MODE FLASHING HOUR : DOWN MINUTES : UP
TIMER/CLOCK
MEMORY
FREQUENCY
FLASHING HOUR : DOWN MINUTES : UP
MEMORY
MEMORY
TWICE
-50- in display
SOUND LEVEL CORRECTION MODE
MEMORY

A. How to set the timer operating time and sound level.
On the timer operating time, the power will be turned on.
(1) Set the Function to CD/AUX, TAPE or PHONO.
(2) Press both the MEMORY button and the TIMER/CLOCK button simultaneously. (Press the TIMER/CLOCK button first), then timer operating time will be indicated.
(3) Press the MEMORY button, then the function display will be flashing and the display indicates "TIMER".
(4) Press Tuning DOWN DOWN(∨)/UP(∧) button to set the desired timer operating time.
(5) Press the MEMORY button, then the display indicates initial setting sound level " ".
(6) Adjust the VOLUME DOWN(∨)/UP(∧) button to set the desired sound level when set is turned on. (–52– –51–, –50–, –49–, –48– . . . . .).
(7) Press the MEMORY button once more, the current time will be indicated in display.
Timer operating time correction is completed.

B. How to set the current time.
(1) Press the TIMER/CLOCK button, then the current time will be indicated.
(2) Press both the MEMORY button and the TIMER/CLOCK button simultaneously (press the TIMER/CLOCK button first) then the timer operating time will be indicated, and the display indicates "TIMER".
(3) Press both the MEMORY button and the TIMER/CLOCK button simultaneously once more, then the current time will be flashed.
(4) Press TUNING DOWN(∨)/UP(∧) button to correct the current time.
(5) Press the MEMORY button, then the current time correction will be completed.

C. How to operate Timer function
(1) Press TIMER ON button.
TIMER is displayed on the display.
(2) Press TIMER ON button again to clear timer feature.
TIMER is disappeared from the display.

9. OPERATION INSTRUCTION

1) POWER ON/OFF AND POWER SOURCE OPERATION

When power is on, high voltage is applied to the POWER OUT. This high voltage is read by RQ3 base making + port of RD15 GND and voltage is read to RQ4 base and dormant status of TA8216 is released.
In the meantime, this high voltage is supplied to the RQ5 base and turns RQ5 on, grounding-port of RD16 and gets RQ2 base ready to receive current.
And this voltage is read by RQ2 collector and changes it to a static voltage in the MC 1812.
D 882 collector voltage is read by RQ1 base and turns RQ1 on and B-voltage is put through the PR3 to become static voltage in the RC5 and RZD1.
As-port of RD16 is grounded turning RQ6 on and RQ7 base reads the voltage through RR17 then RQ7 is turned on and B+ is allowed to the RR18 and drives the MOTOR.
1. RQ5 inoperative (when being shorted out) Lamp are lit even if power is not turned on.
2. RQ3 CP45 inoperative -------------Always muting. (TA8216H)
3. A 709 inoperative ---------Motor rotates even if power is off.

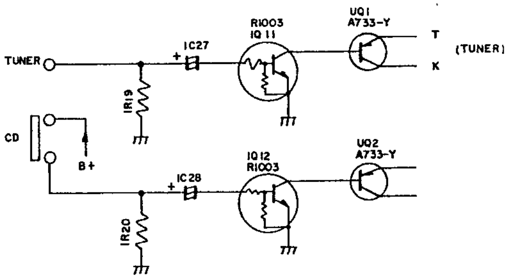
2) FUNCTION S/W CD ⟷ TUNER CONVERTING OPERATION

If TUNER function is pressed, B+ is supplied to IQ11 base through IC27 making IC11 collector momentarily GND.

At this point UQ1 is operated giving the same effect as pressing TACT s/w (T and K are shorted out) and function changes to TUNER (same procedures apply to CD).

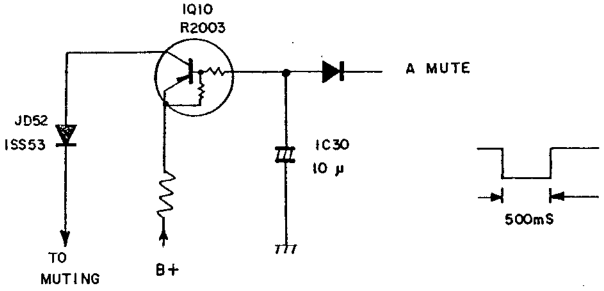
TUNER IC27 UQ1 A733 K (TUNER) IR19 CD B+ IR20 A733 UQ2 T

IQ10 A MUTE 500mS TO MUTING B+
JD52
ISS53



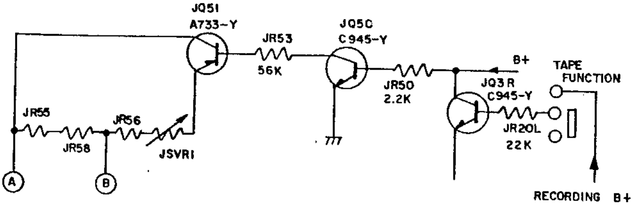
3) MUTING OPERATION WHEN PRESSING TACT SWITCH

When pressing the key, MUTE port drops to low for 500ms and turns IQ10 base to low mode and IQ10 to an ON state and muting signals operate muting circuit through JD52 for 500ms and gets rid of popping noise.



4) HIGH SPEED OPERATION

During normal speed, high voltage is supplied to the base of JQ50 and the collector becomes GND and JQ51 is turned on and JR55, JR58, JR56, JSVR1 are in parallel and has normal speed state. If you press high speed switch during RECORD with tape function state, high voltage is supplied to the base of JQ3R and the base of JQ50 is in GND status and JQ51 is turned off and goes to high speed operation status.


JQ51
A733-Y
JR53
56K
JQ5C
C945-Y
B+
TAPE
FUNCTION
JR50
2.2K
JQ3R
C945-Y
JR20L
22K
JR55
JR58
JR56
JSVR1
A
B
RECORDING B+

- * High operates only when recording.

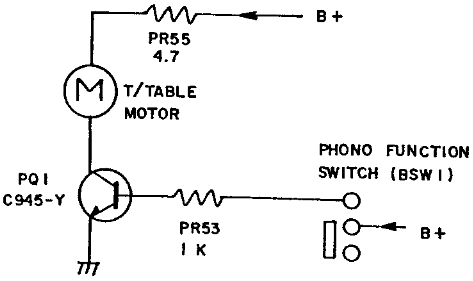
- * Turning EQ1 on during high speed makes mic mixing inoperative.

5) TAPE SELECTOR OPERATION

If you press TAPE sellector switch during play, high voltage is supplied to the port 8 of TA8149, and switches internally resulting in connection between 4 and 8 and then JR6R and JR78 change to the parallel state and compensate the frequency response of CrO_2 TQ3R and JQ3L is turned on to compensate gain and 820 and 150 is put in parallel state and increased 3 dB.

6) TURN TABLE OPERATION

If you sellect PHONO function high voltage is supplied to the base of PQ1 and MOTOR becomes GND state and drives motor.

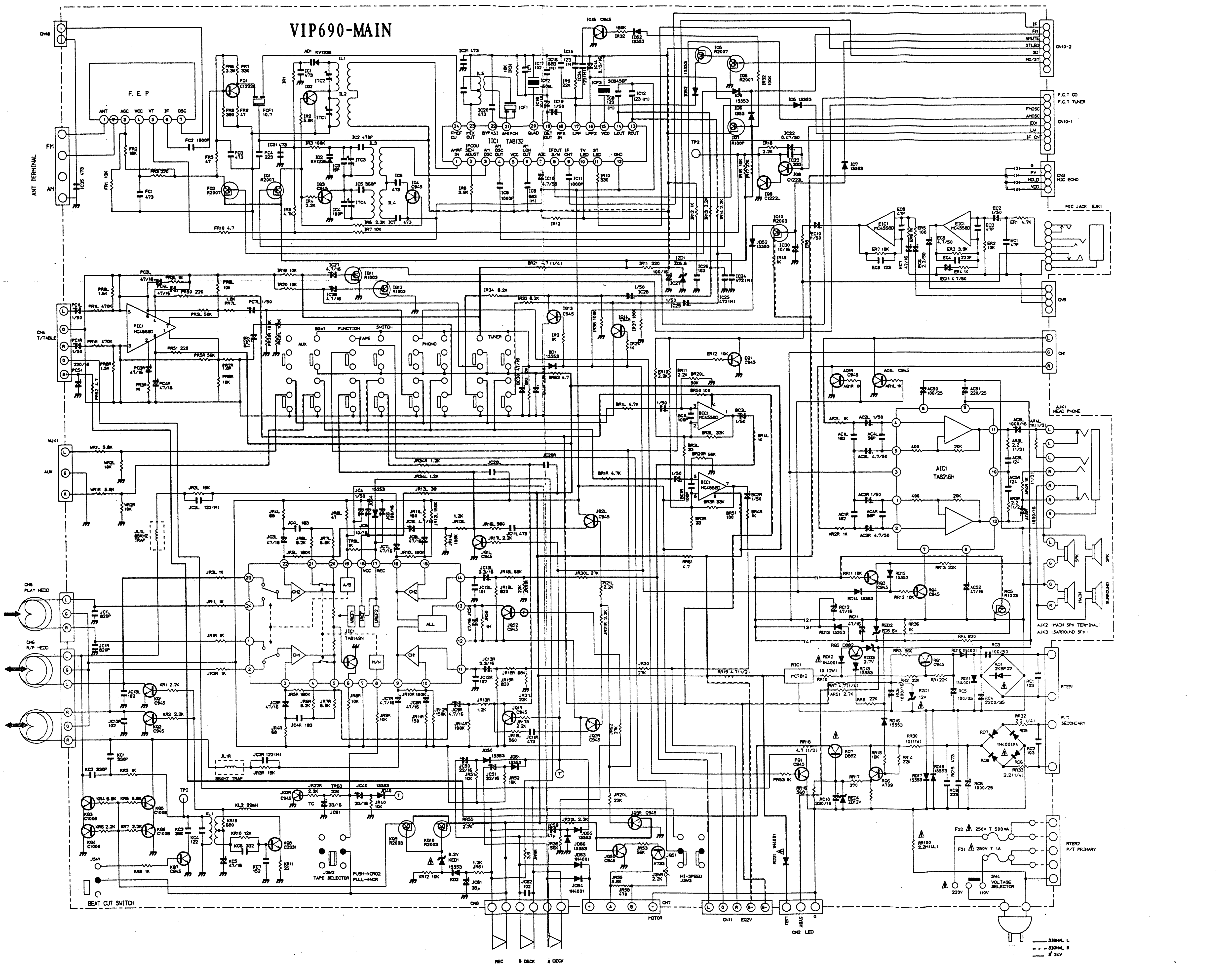

PR55
4.7
B+
M
T/TABLE
MOTOR
PHONO FUNCTION
SWITCH (BSW1)
PQ1
C945-Y
PR53
1 K
B+

7) ST/MO (TA 8132 NO 17 LPF1) OPERATION

CN10-2 OR MO/ST port becomes high when on MONO. And then IQ6 base switches to high and IQ6 collector changes to GND status and IQ5 has ON state and supplies B^+ to 17 through ID52 changing high and converting to mono.

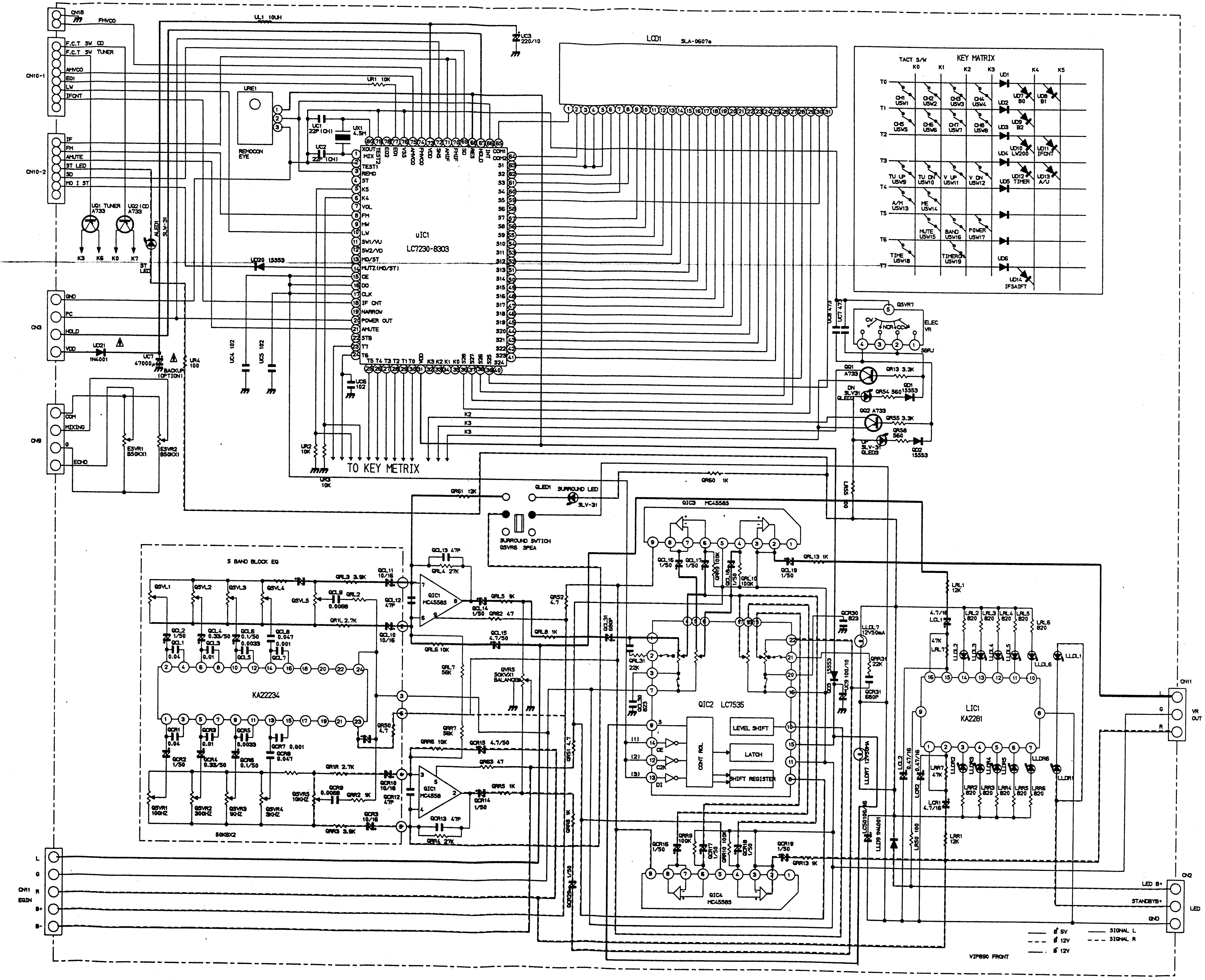
10. SCHEMATIC DIAGRAM

10-1. MAIN


VIP690-MAIN
F. E. P
ANT TERMINAL
FM
AM
T/TABLE
AUX
PLAY HEAD
R/P HEAD
BEAT CUT SWITCH
TAPE SELECTOR
MOTOR
REC
B DECK
A DECK
MIC JACK
MIC ECHO
HEAD PHONE
TA8216H
TA8132
TA8149N
MC4558D
MC7812
FUNCTION SWITCH
TAPE
PHONO
TUNER
F.C.T CD
F.C.T TUNER
SPK
MAIN
SURROUND
AJK2 (MAIN SPK TERMINAL)
AJK3 (SARROUND SPK)
P/T PRIMARY
P/T SECONDARY
VOLTAGE SELECTOR
220V
110V
SIGNAL L
SIGNAL R
B 24V

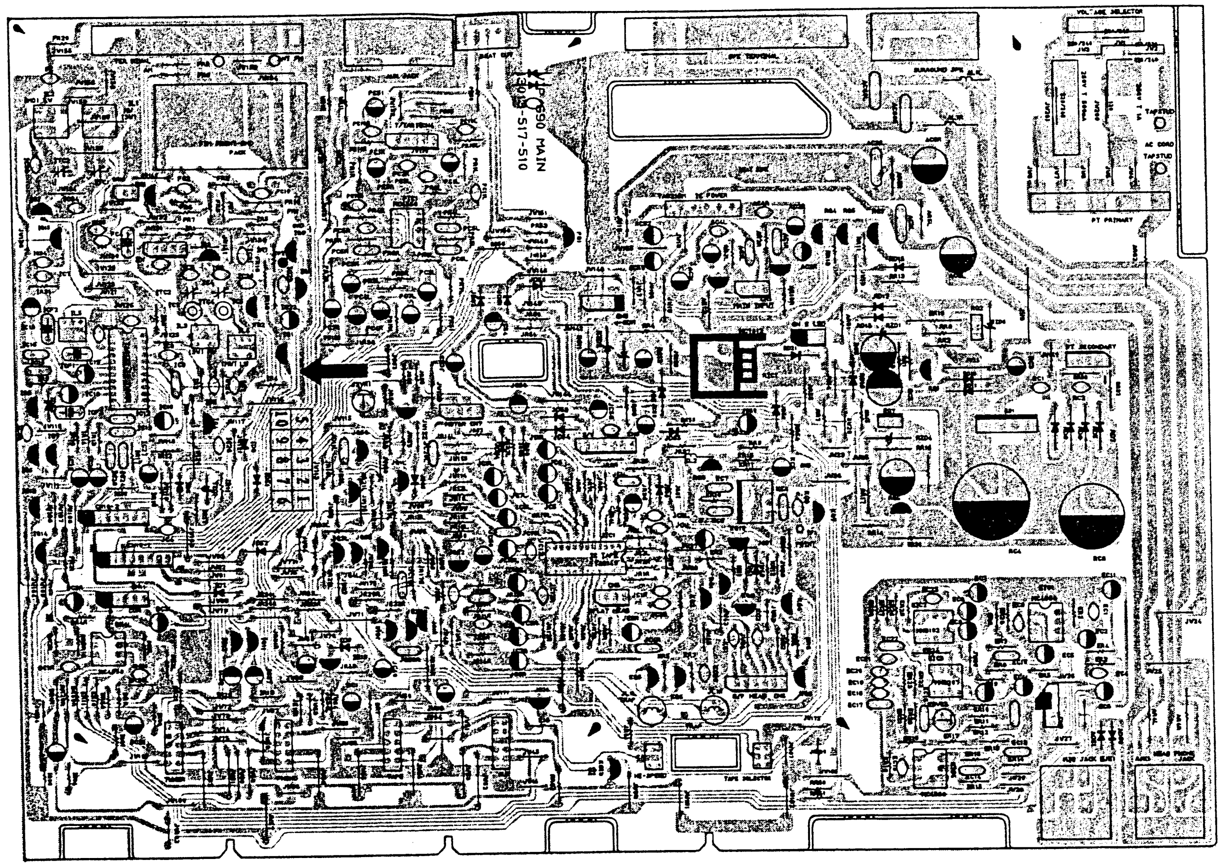
1. This schematic diagram may change for improvement without advance notice.
2. All resistance values are indicated in OHM and 1/8W unless outherwise noted, k=KILLO OHMS M=MEGA OHMS
3. All capacitance values are indicated in MICRO FARADS, P=PICO FARADS.

10-2. FRONT

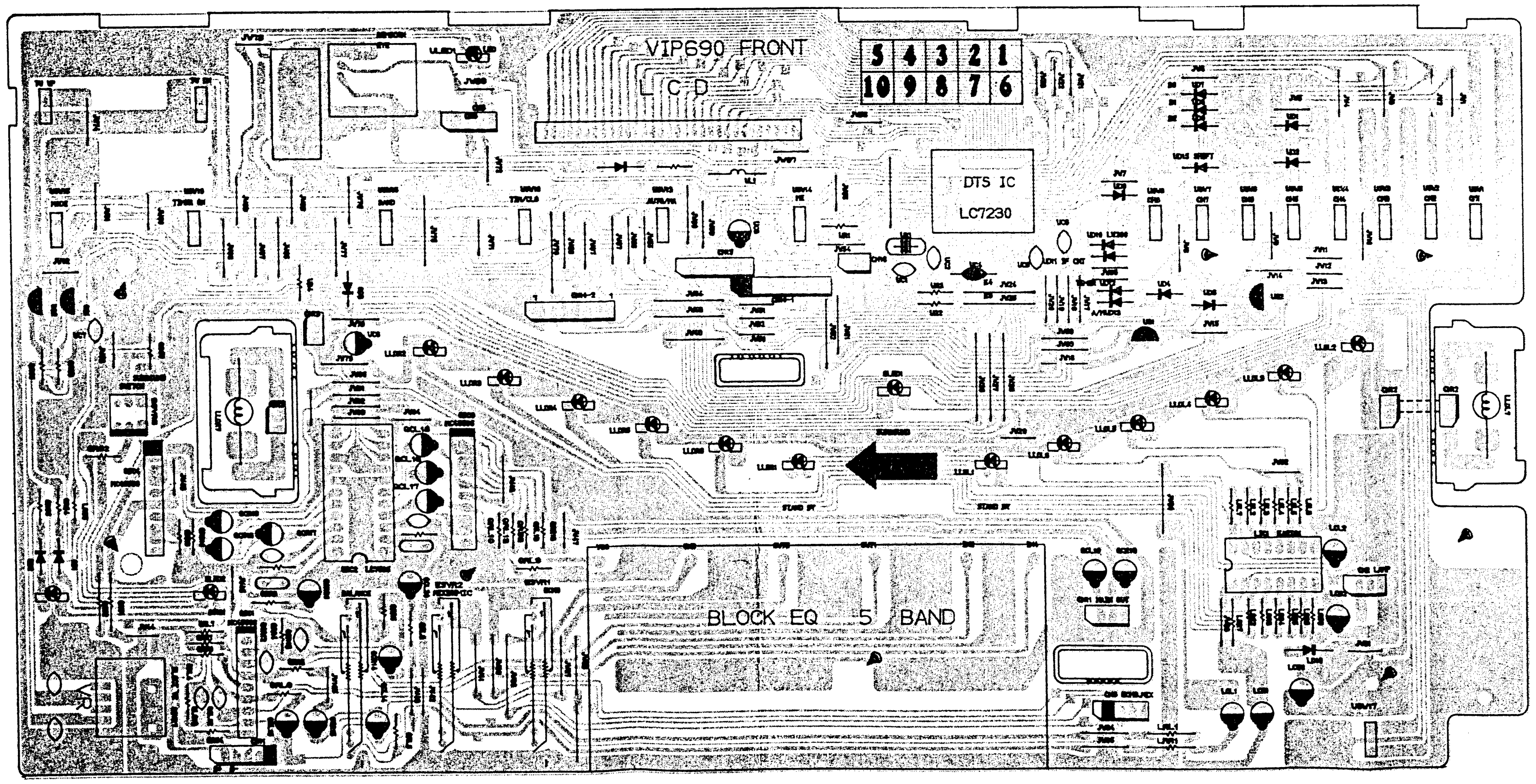

CN18
FMVCO
CN10-1
F.C.T 5V CD
F.C.T 5V TUNER
AMVCO
EO1
LW
IFCNT
CN10-2
IF
FM
AMUTE
ST LED
3D
MO I ST
UQ1 TUNER A733
UQ2 (CD A733
ALED1 SLV-31
K3 K6 K0 K7
ST LED
CN3
GND
PC
HOLD
VDD
UD21 1N4001
UC7 47000
BACKUP (OPTION)
UR4 100
CN9
COM
MIXING
G
ECHO
ESVR1 B50KX1
ESVR2 B50KX1
UL1 10UH
UC3 220/10
URE1
REMOCON EYE
UR1 10K
UC1 22P (CH)
UC2 22P (CH)
UX1 4.5M
UD20 1S553
UC4 102
UC5 102
UC6 102
uIC1
LC7230-8303
XOUT MIX TEST1 REMO ST K5 K4 VOL FM MW LW SW1/VU SW2/VD MO/ST MUTZ(MO/ST) CE DO CLK IF CNT NARROW POWER OUT AMUTE STB T7 T6
COM1 COM2 S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15 S16 S17 S18 S19 S20 S21 S22 S23 S24
T5 T4 T3 T2 T1 T0 VDD K3 K2 K1 K0 S28 S27 S26 S25
TEST2 EO2 EO1 VSS AMVCO FMVCO VDD SNS AMIF FMIF SD RES HOLD INT
UR2 10K
UR3 10K
TO KEY METRIX
K2
K3
K3
LCD1 SLA-0607a
KEY MATRIX
TACT S/W
K0 K1 K2 K3 K4 K5
T0 T1 T2 T3 T4 T5 T6 T7
CH1 USW1
CH2 USW2
CH3 USW3
CH4 USW4
CH5 USW5
CH6 USW6
CH7 USW7
CH8 USW8
TU UP USW9
TU DN USW10
V UP USW11
V DN USW12
A/M USW13
ME USW14
MUTE USW15
BAND USW16
POWER USW17
TIME USW18
TIMERON USW19
UD1 UD2 UD3 UD4 UD5 UD6
UD7 B0
UD8 B1
UD9 B2
UD10 LW200
UD11 IFCNT
UD12 TIMER
UD13 A/U
UD14 IF5AIFT
UC8 47
UC7 47
QSVR7
ELEC VR
CW NCR CCW
5BRJ
QQ1 A733
QR13 3.3K
QN SLV31 QLED2
QR54 560
QD1 1S553
QQ2 A733
QR55 3.3K
QR56 560
UP SLV-31 QLED3
QD2 1S553
QR61 12K
QLED1 SURROUND LED
SLV-31
SURROUND SWTICH
QSVR6 3PEA
QR60 1K
LR55 100
QIC3 MC4558
5 BAND BLOCK EQ
QSVL1 QSVL2 QSVL3 QSVL4 QSVL5
QRL3 3.9K
QCL11 10/16
QCL12 47P
QCL13 47P
QRL4 27K
QIC1 MC4558
QCL9 0.0068
QRL2 1K
QRL 2.7K
QCL10 10/16
QCL14 1/50
QRL5 1K
QRB2 47
QRS2 4.7
QCL15 4.7/50
QRL8 1K
QRL6 10K
QRL7 56K
QCL2 1/50
QCL1 0.04
QCL4 0.33/50
QCL3 0.01
QCL6 0.1/50
QCL5 0.0033
QCL8 0.047
QCL7 0.001
KA22234
QCR1 0.04
QCR3 0.01
QCR5 0.0033
QCR7 0.001
QCR2 1/50
QCR4 0.33/50
QCR6 0.1/50
QCR8 0.047
QSVR1 100HZ
QSVR2 300HZ
QSVR3 1KHZ
QSVR4 3KHZ
QSVR5 10KHZ
50KBX2
QR1R 2.7K
QCR9 0.0068
QRR2 1K
QCR10 10/16
QCR12 47P
QCR3 10/16
QRR3 3.9K
QRR4 27K
QCR13 47P
QRS0 4.7
QRR7 56K
QRR6 10K
QCR15 4.7/50
QRR8 47
QRR5 1K
QCR14 1/50
QRS1 4.7
QVR5 50KWX1 BALANCE
QCL16 1/50
QCL17 1/50
QRL9 100K
QRL10 100K
QCL18 1/50
QCL19 1/50
QRL13 1K
QCL31 680P
QRL31 22K
QCL30 823
QCR30 823
LLDL7 12V50mA
QRR31 22K
QCR31 680P
QD3 1S553
LC9 100/10
QIC2 LC7535
LEVEL SHIFT
LATCH
SHIFT REGISTER
CONT ROL
CE CK DI
QCR16 1/50
QRR9 100K
QCR17 1/50
QRR10 100K
QCR18 1/50
QCR19 1/50
QRR13 1K
QIC4 MC4558
QCR20 1/50
LLDR7 12V50mA
LC50 100/16
LL09 1N4001
LR50 100
LRL1 12K
LCL1 4.7/16
LRL7 47K
LRL2 820 LRL3 820 LRL4 820 LRL5 820 LRL6 820
LLDL1 LLDL6
LIC1
KA2281
LCL2 0.47/16
LCR2 0.47/16
LRR7 47K
LRR2 820 LRR3 820 LRR4 820 LRR5 820 LRR6 820
LLDR1 LLDR6
LCR1 4.7/16
LRR1 12K
CN11
VR OUT
L
G
R
CN11 EQIN
L G R B+ B-
CN2
LED B+
STANDBYB+
GND
LED
5V
12V
12V
SIGNAL L
SIGNAL R
VIP690 FRONT

11. PCB PATTERN AND MARKING (PATTERN SIDE)

MAIN PCB

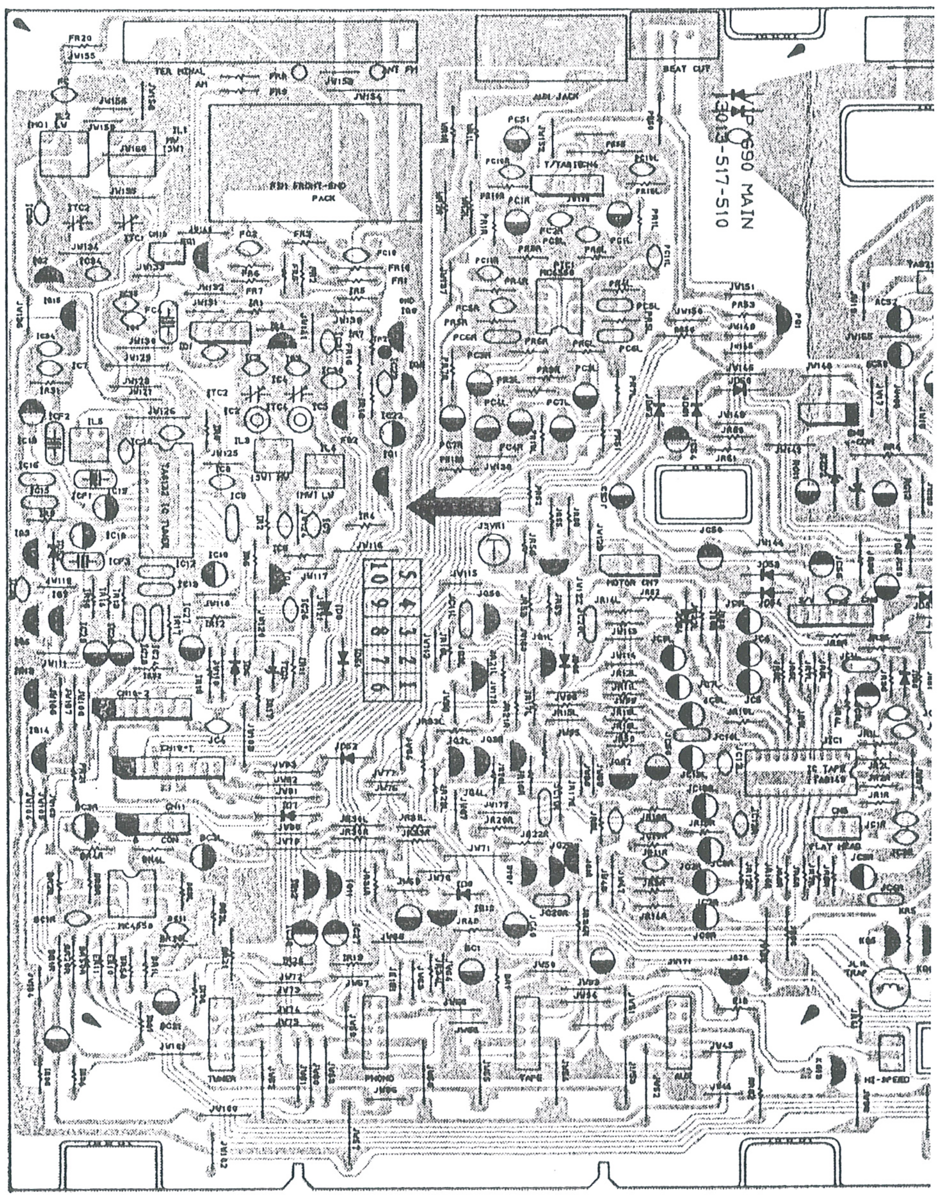

VIP690 MAIN

FRONT PCB

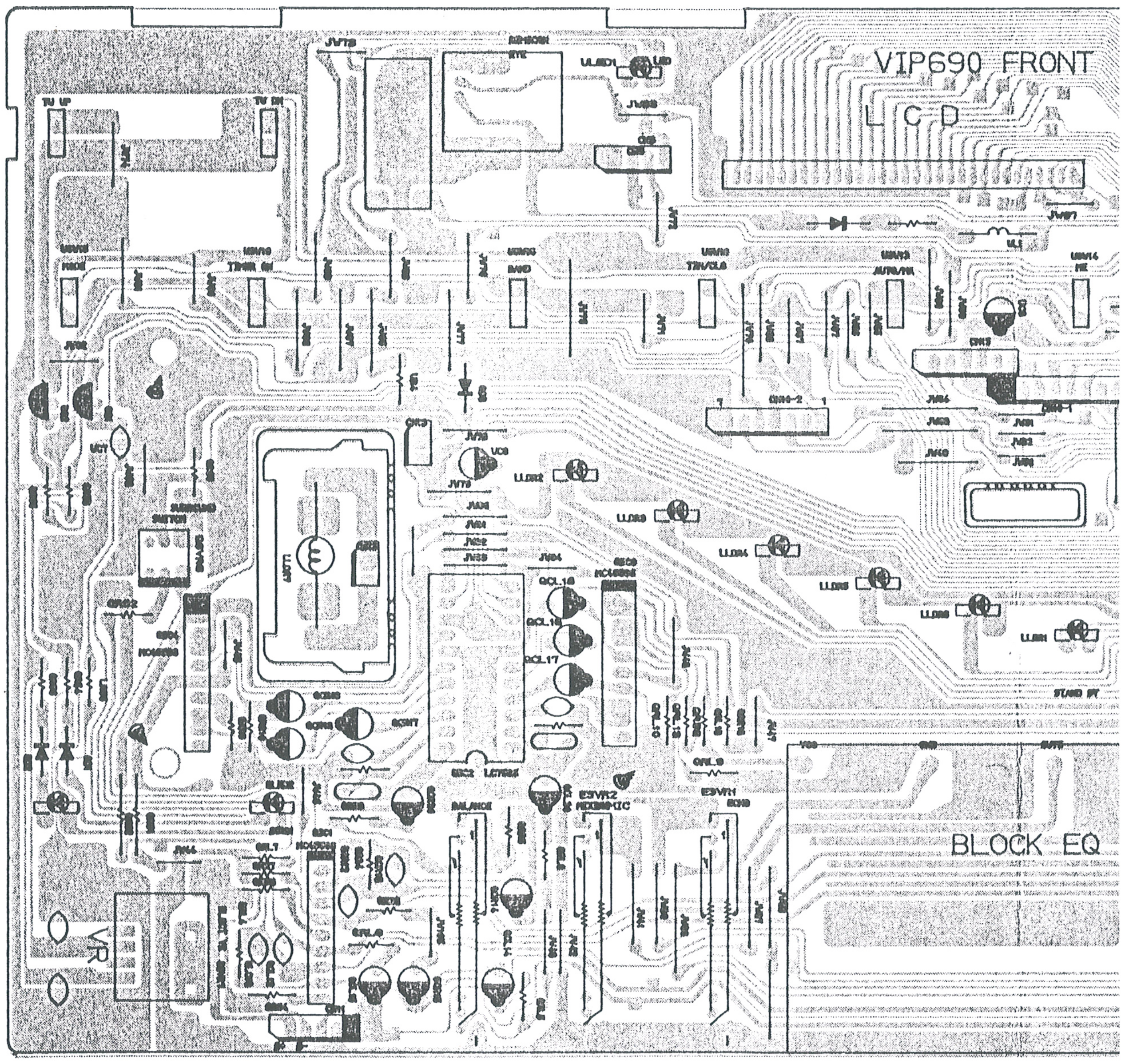

VIP690 FRONT
C D
5 4 3 2 1
10 9 8 7 6
DTS IC
LC7230
BLOCK EQ 5 BAND

11. PCB PATTERN AND MARKING (PATTERN SIDE)

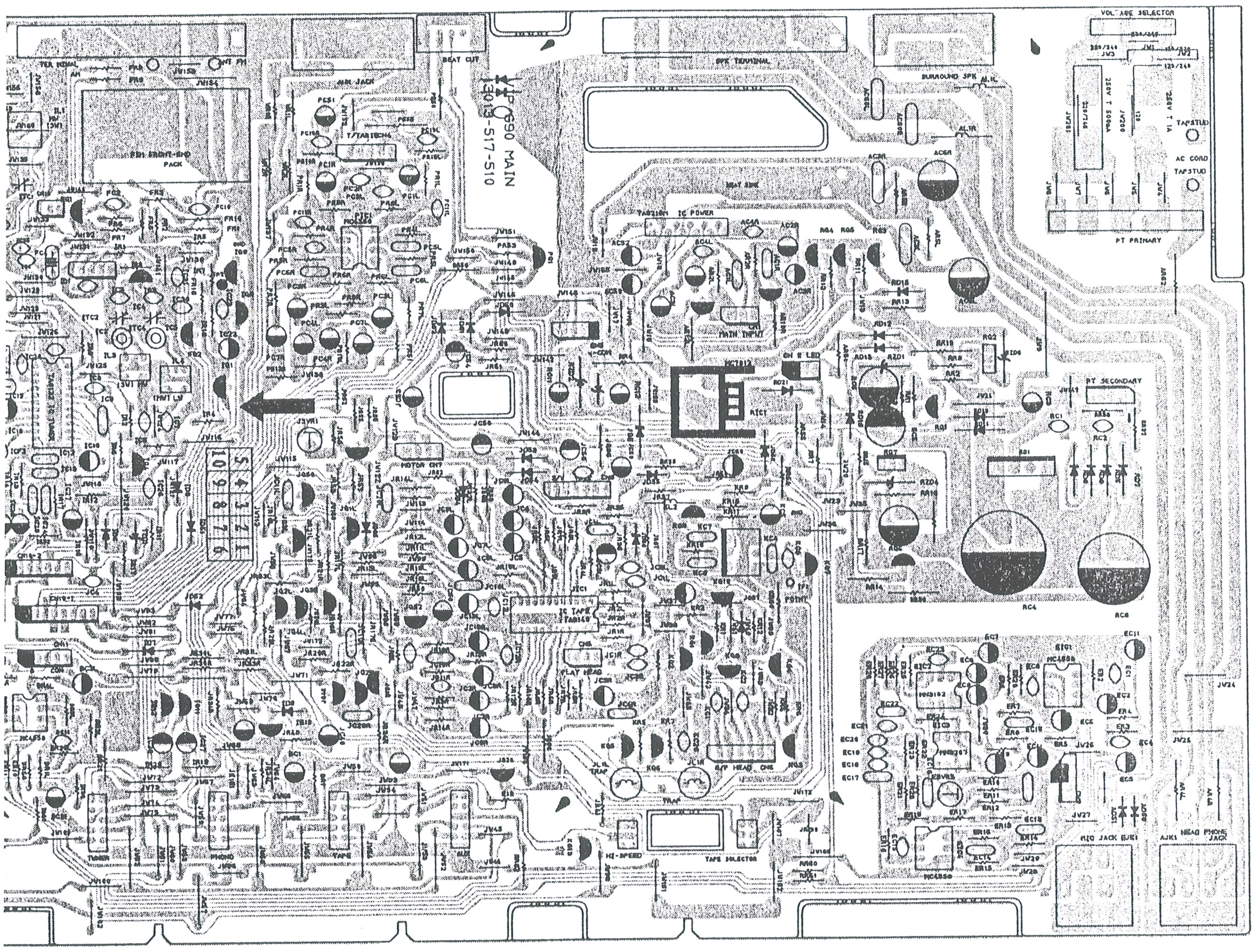
MAIN PCB

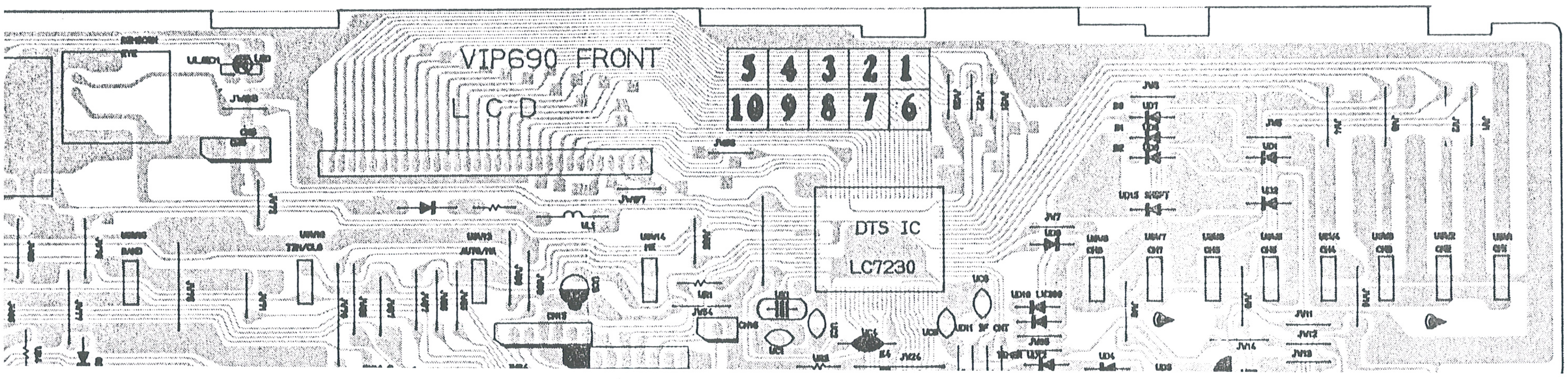

VIP690 MAIN
TUNER
PHONO
TAPE

FRONT PCB

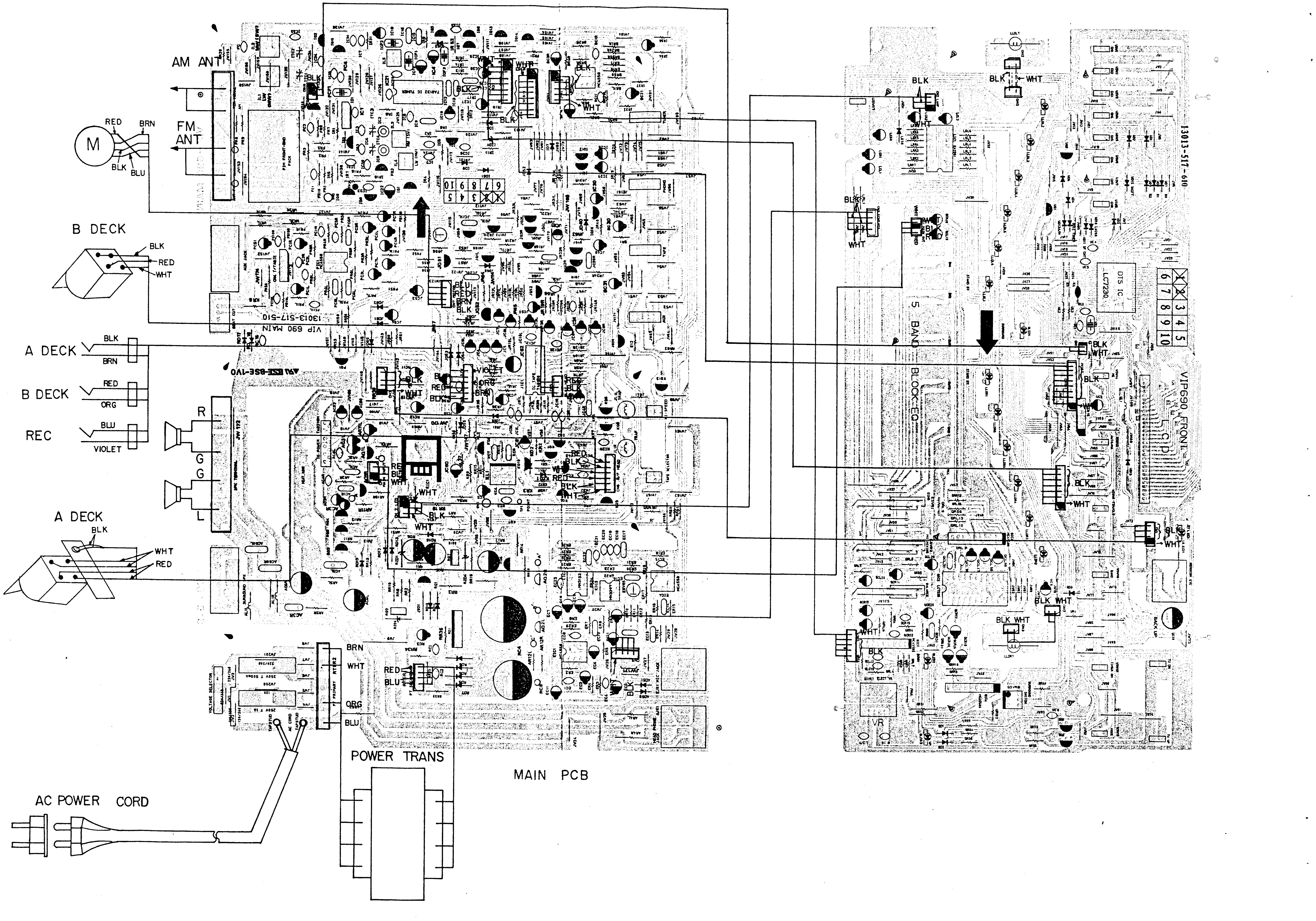

VIP690 FRONT
LCD
BLOCK EQ
VR
BALANCE

TERN SIDE)

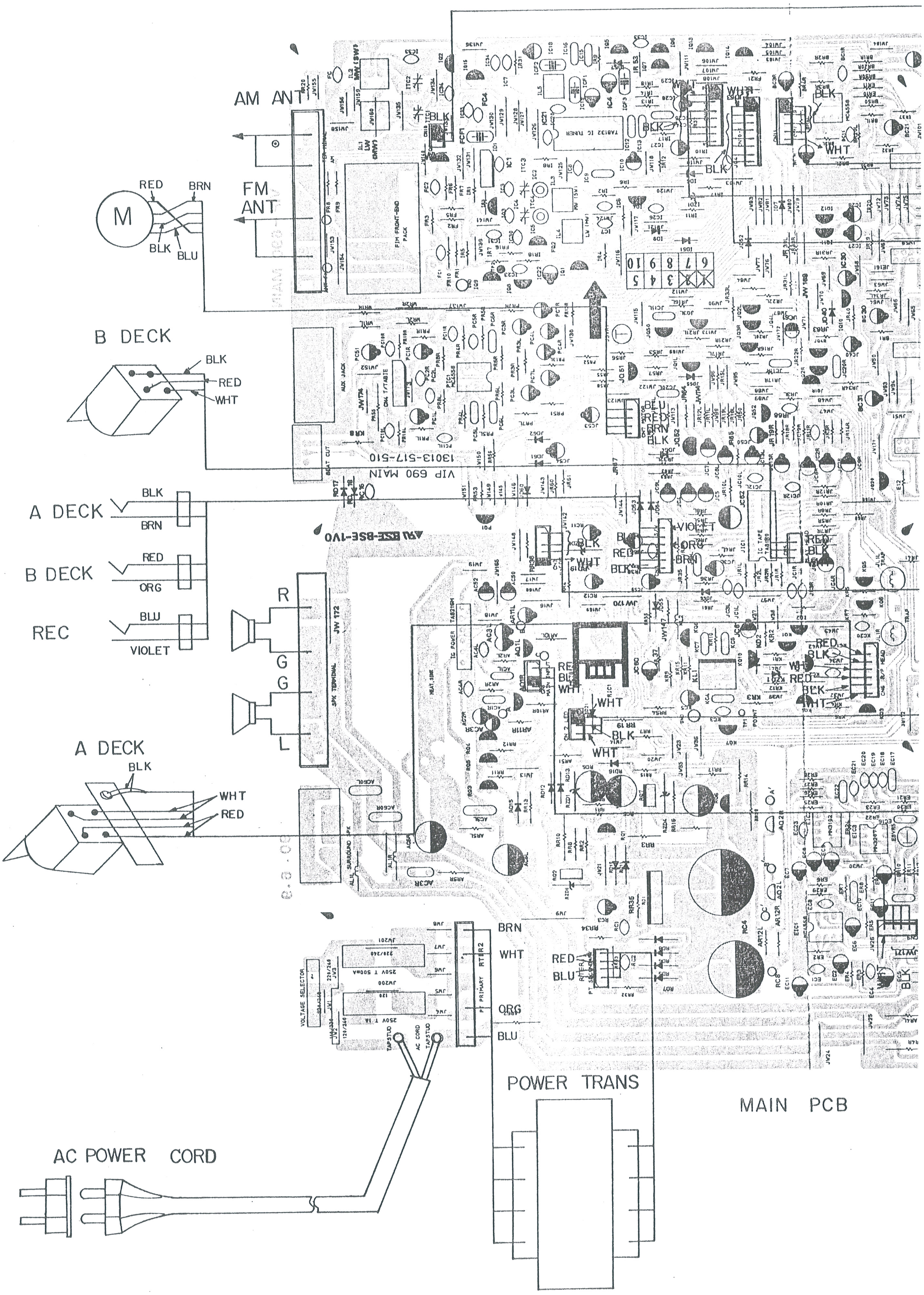

VIP690 MAIN
SPK TERMINAL
VOLTAGE SELECTOR
AC CORD
PT PRIMARY
PT SECONDARY
MAIN INPUT
TAPE SELECTOR
HI-SPEED
MIC JACK
HEAD PHONE JACK
5
4
3
2
1
10
9
8
7
6

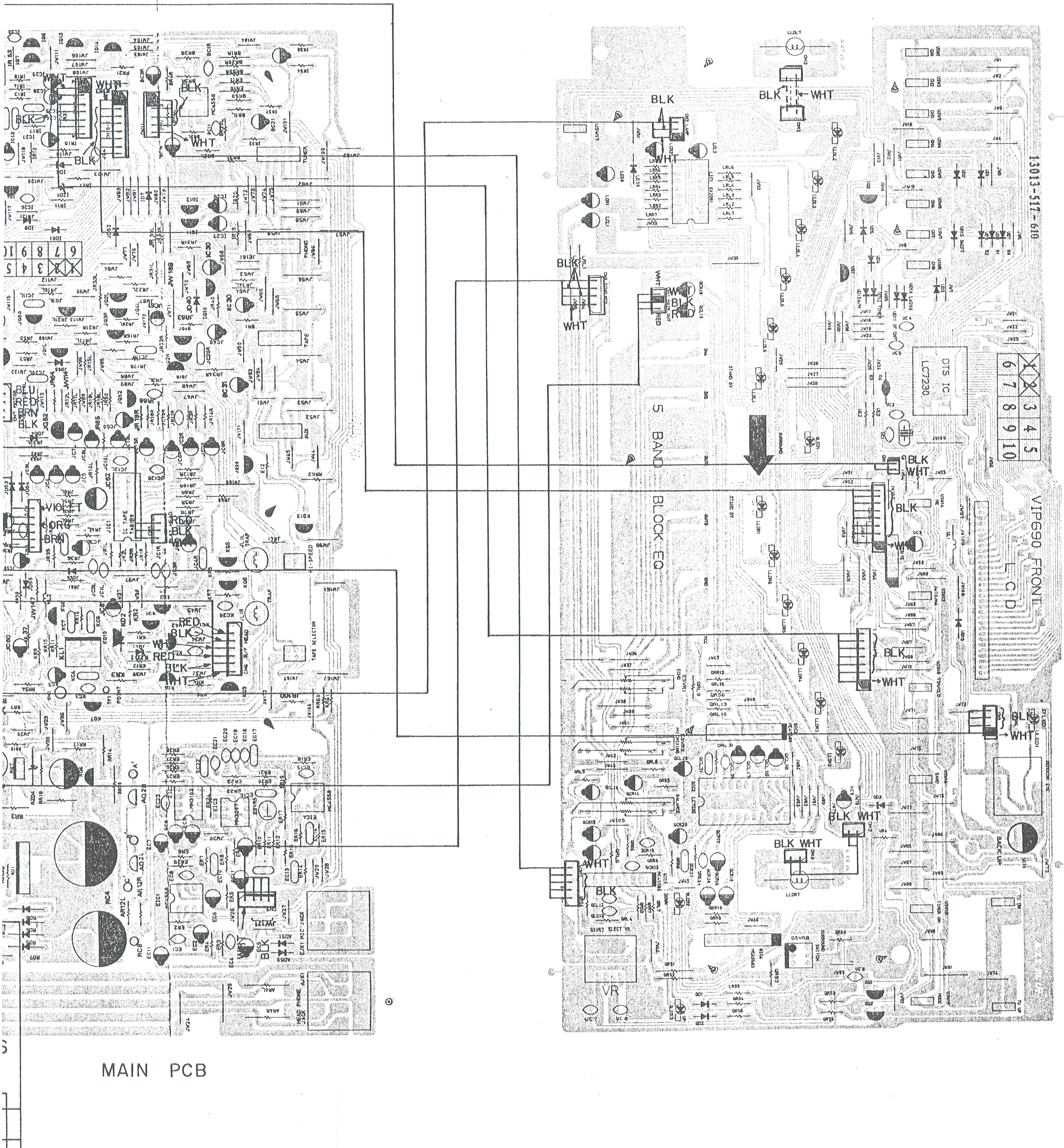

VIP690 FRONT
L C D
DTS IC
LC7230

12. WIRING DIAGRAM (PARTS SIDE)


AM ANT
FM ANT
M
RED
BRN
BLK
BLU
B DECK
BLK
RED
WHT
A DECK
BLK
BRN
B DECK
RED
ORG
REC
BLU
VIOLET
R
G
G
L
A DECK
BLK
WHT
RED
13013-517-510
VIP 690 MAIN
BRN
WHT
ORG
BLU
RED
BLU
POWER TRANS
MAIN PCB
AC POWER CORD
5 BAND BLOCK-EQ
VIP690 FRONT
13013-517-610
DTS IC LC7230
VR
BACK UP

12. WIRING DIAGRAM (PARTS SIDE)

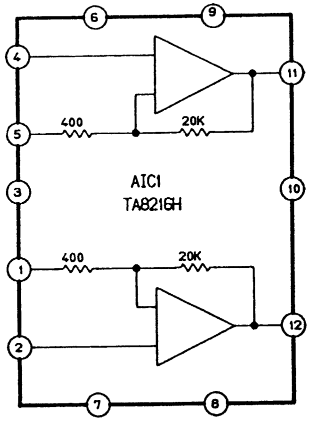

AM ANT
FM ANT
M
RED
BRN
BLK
BLU
B DECK
BLK
RED
WHT
A DECK
BLK
BRN
B DECK
RED
ORG
REC
BLU
VIOLET
R
G
G
L
A DECK
BLK
WHT
RED
VIP 690 MAIN
13013-517-510
BRN
WHT
ORG
BLU
RED
BLU
POWER TRANS
MAIN PCB
AC POWER CORD


13013-517-610
VIP690 FRONT
LCD
DTS IC
LC7230
5 BAND BLOCK EQ
VR
BACK UP
TAPE SELECTOR
HI-SPEED
MIC JACK
HEAD PHONE JACK
BLK
WHT
RED
VIOLET
ORG
BRN

MAIN PCB

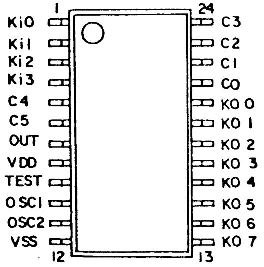
13. TR AND IC LEAD LAYOUT

TA8216H (AIC 1) : **POWER IC**



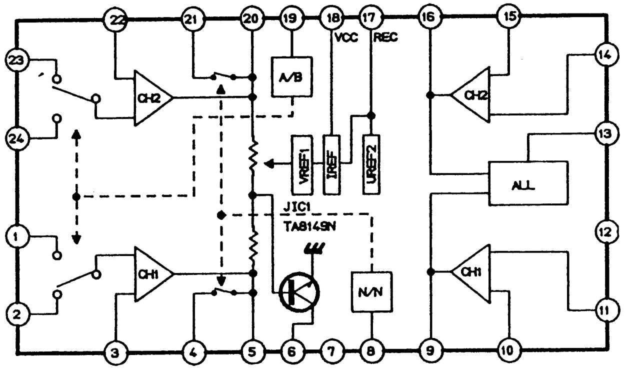
AIC1
TA8216H
400
20K
1
2
3
4
5
6
7
8
9
10
11
12

LC7461M (REMOTE CONTROLLER) :



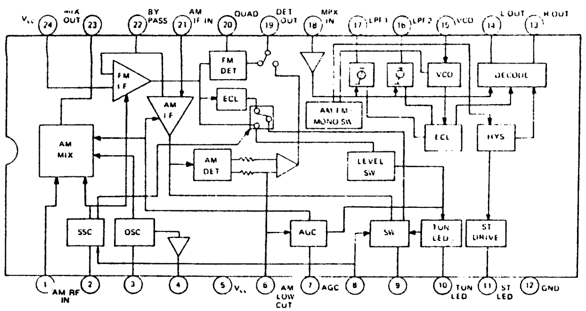
1
24
KiO
Ki1
Ki2
Ki3
C4
C5
OUT
VDD
TEST
OSC1
OSC2
VSS
12
C3
C2
C1
CO
KO 0
KO 1
KO 2
KO 3
KO 4
KO 5
KO 6
KO 7
13

TA8149N (JIC 1) : **PRE/REC IC**

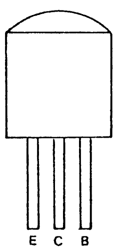


VCC
REC
A/B
VREF1
IREF
VREF2
CH2
CH1
ALL
N/N
JIC1
TA8149N

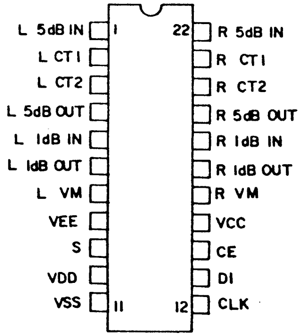
TA8132N (IIC 1) : IF + MPX


Vcc
MIX OUT
BY PASS
AM IF IN
QUAD
DET OUT
MPX IN
LPF 1
LPF 2
VCO
L OUT
R OUT
FM IF
AM IF
FM DET
ECL
AM MIX
AM DET
AM FM MONO SW
LEVEL SW
DECODE
HYS
SSC
OSC
AGC
SW
TUN LED
ST DRIVE
AM RF IN
Vcc
AM LOW CUT
AGC
TUN LED
ST LED
GND

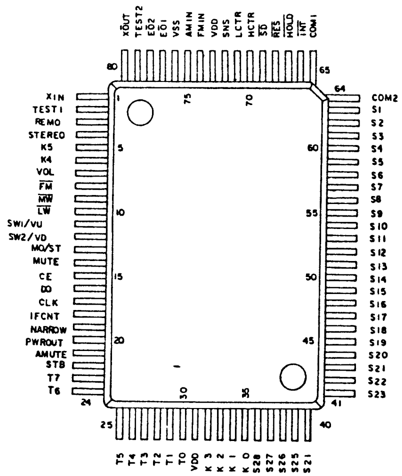
C1222L
KSA733
KSR1007
KSR2007



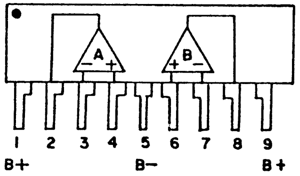
LC7535 (QIC 2) : VOLUME IC


L 5dB IN
L CT1
L CT2
L 5dB OUT
L 1dB IN
L 1dB OUT
L VM
VEE
S
VDD
VSS
1
11
22
12
R 5dB IN
R CT1
R CT2
R 5dB OUT
R 1dB IN
R 1dB OUT
R VM
VCC
CE
DI
CLK

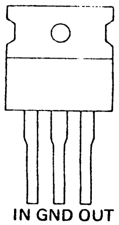
LC7230 (UIC 1) : DTS IC


XŌUT
TEST2
EO2
EO1
VSS
AMIN
FMIN
VDD
SNS
LCTR
HCTR
SD
RES
HOLD
INT
COM1
80
65
64
XIN
TEST1
REMO
STEREO
K5
K4
VOL
FM
MW
LW
SW1/VU
SW2/VD
MO/ST
MUTE
CE
DO
CLK
IFCNT
NARROW
PWROUT
AMUTE
STB
T7
T6
24
25
COM2
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
S17
S18
S19
S20
S21
S22
S23
41
40
T5
T4
T3
T2
T1
T0
VDD
K3
K2
K1
K0
S28
S27
S26
S25
S21

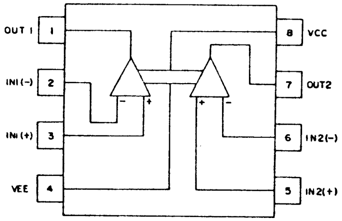
MC4558S (QIC 3, QIC 4) : OP AMP


A
B
1
2
3
4
5
6
7
8
9
B+
B−
B+

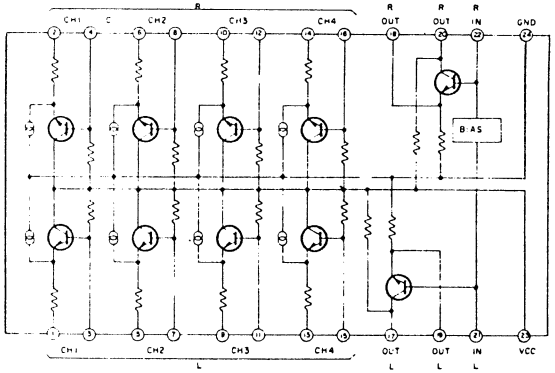
MC7812 (RIC 1) : IC REGULATOR B+ B-



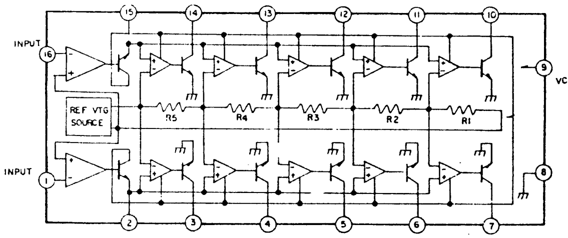
MC4558C (PIC1, BIC 1, EIC 1) : OP AMP


OUT 1
IN1(−)
IN1(+)
VEE
VCC
OUT2
IN2(−)
IN2(+)
1
2
3
4
8
7
6
5

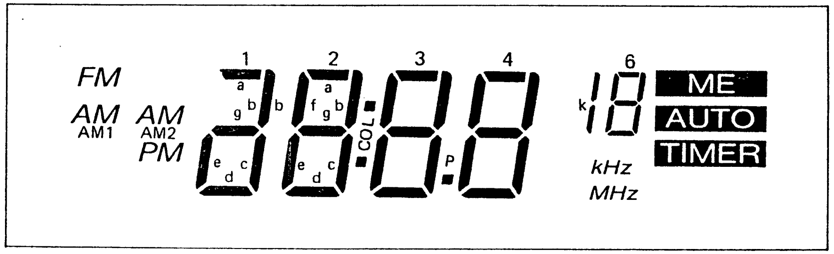
KA22234 (EQ ASS'Y) : 5 BAND EQ IC


R
CH1
CH2
CH3
CH4
OUT
IN
GND
BIAS
L
OUT
IN
VCC

KA2281 (LIC 1) : DISPLAY IC


INPUT
INPUT
REF VTG SOURCE
R5
R4
R3
R2
R1
VCC

SLA-120-026B : LCD-DTS


FM
AM
AM1
AM
AM2
PM
1
2
3
4
6
COL
P
k
kHz
MHz
ME
AUTO
TIMER

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
COM 1	COM 1			AM 1			PM		B 1	C 1	F 2	E 2	D 2	A 2	F 3	E 3
COM 2		COM 2	FM					AM 2	ADE G 1	COL	B 2	G 2	C 2		B 3	G 3
	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
COM 1	D 3	A 3	F 4	E 4	D 4	A 4			KHz	E 6	D 6	TIME −R	A 6	ME	F 6	
COM 2	C 3		B 4	G 4	C 4				MHz P	G 6	C 6	K		AU-TO	B 6	

14. IC VOLTAGE READING

1. **TUNER IC : TA8132**

PIN No.	TYPICAL VALUE (V)		
	FM	AM(MW)	LW
1	5.4	5.4	5.4
2	5.4	5.4	5.4
3	5.4	5.4	5.4
4	5.4	5.1	5.1
5	5.4	5.4	5.4
6	4.7	4.8	4.8
7	0.4	0.2	0.2
8	0	0	0
9	5.4	5.4	5.4
10	5.4	5.4	5.4
11	9.3	9.3	9.3
12	0	0	0
13	1.0	1.0	1.0
14	1.0	1.0	1.0
15	4.7	4.9	4.9
16	4.5	5.4	5.4
17	4.5	5.1	5.1
18	0.6	0.6	0.6
19	1.0	1.9	1.9
20	4.5	4.8	4.8
21	5.4	5.4	5.4
22	5.2	4.7	4.7
23	5.4	5.4	5.4
24	5.4	5.4	5.4

2. **POWER IC : TA8216H**

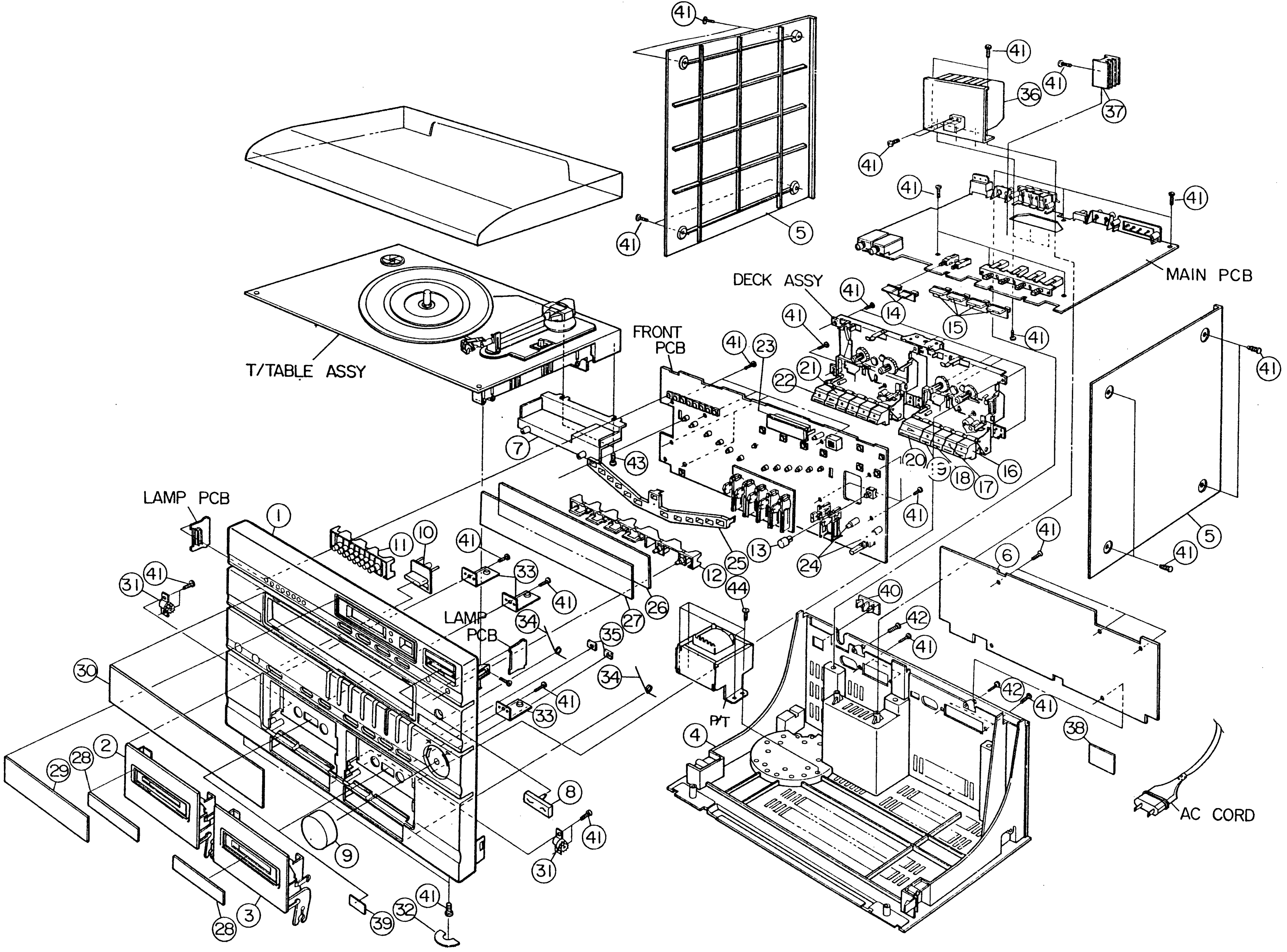
PIN No.	TERMINAL VOLTAGE
1	1.6
2	0
3	0
4	0
5	1.6
6	10.5
7	14.8
8	5.0
9	31.0
10	0
11	4.2
12	14.0

3. **TAPE IC: TA8149N(TEST TAPE 1KHz)**

PIN No.	TYPICAL VALUE (V)		
	STOP	PLAY	REC
1	0	0	0
2	0	0	0
3	1.3	1.3	1.3
4	2.0	2.0	1.7
5	2.0	2.0	1.7
6	1.6	1.6	1.5
7	0	0	0
8	0	0	0
9	0.2	0.2	2.9
10	1.6	1.6	1.3
11	0	0	0
12	0	0	0
13	0	0	1.1
14	0	0	0
15	1.6	0.1	1.3
16	0.2	0	2.8
17	0	0	11.0
18	11.7	11.7	0
19	0	0	0
20	1.4	1.4	1.4
21	1.4	1.4	1.4
22	1.3	1.3	1.3
23	0	0	0
24	0	0	0

4. OP AMP
   1) MC4558C (PIC1, BIC1, EIC1)
      PIN NO.4 −12V, PIN N0.8 +12V
      OTHERS ⟶ 0V
   2) MC4558C (QIC3, QIC4)
      PIN NO. 1 +12V, PIN NO. 9 12V
      OTHERS ⟶ 0V

15. EXPLODED VIEW


41
5
41
41
36
41
37
41
41
41
MAIN PCB
DECK ASSY
41
14
15
41
41
41
T/TABLE ASSY
FRONT PCB
41
23
21
22
7
43
20
19
18
17
16
41
5
41
41
5
LAMP PCB
1
11
10
41
33
41
31
41
13
24
25
12
26
27
44
6
41
40
42
41
LAMP PCB
34
35
34
30
33
41
P/T
4
42
41
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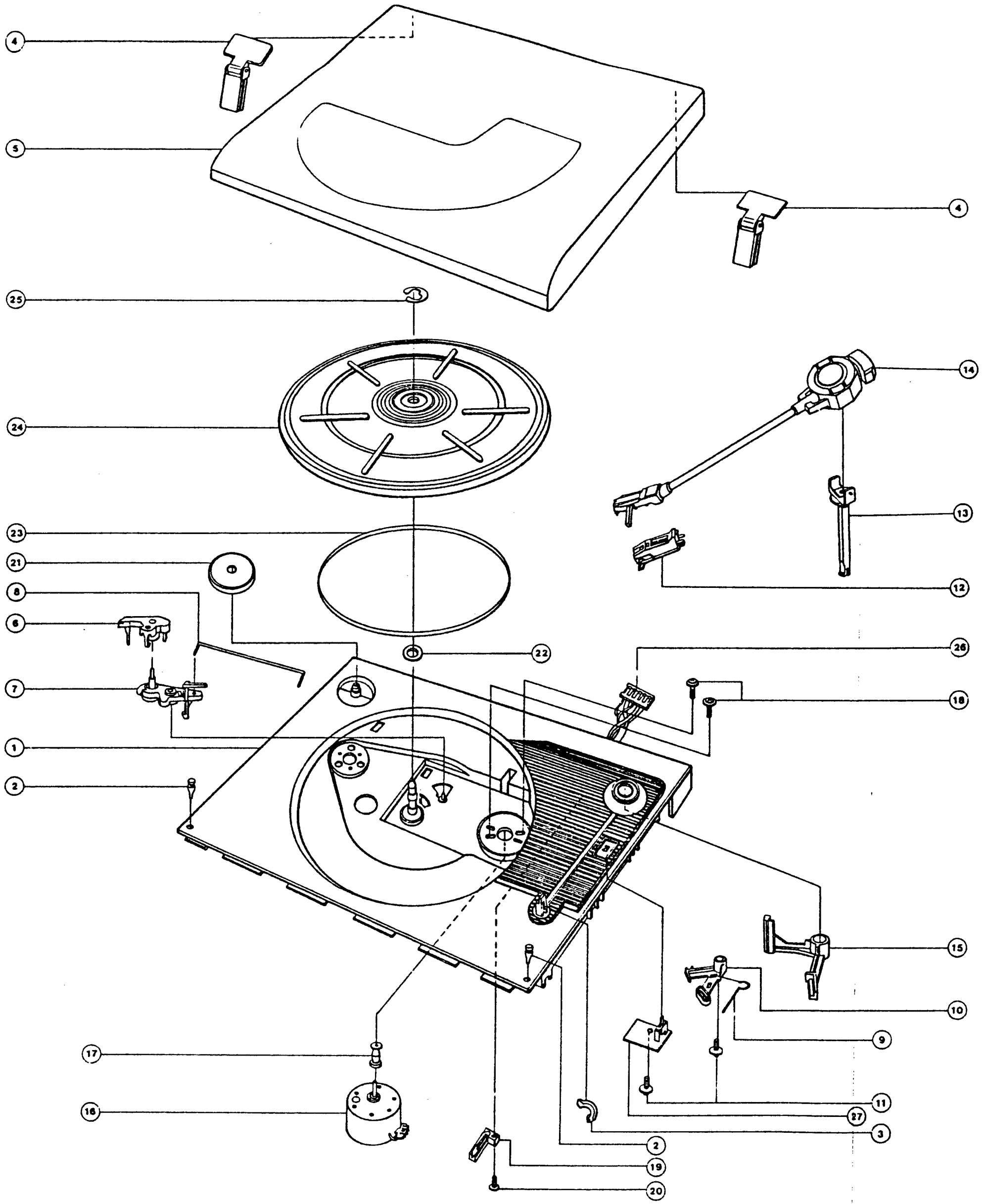
TURN TABLE (JP981-PC) : 15029-506-110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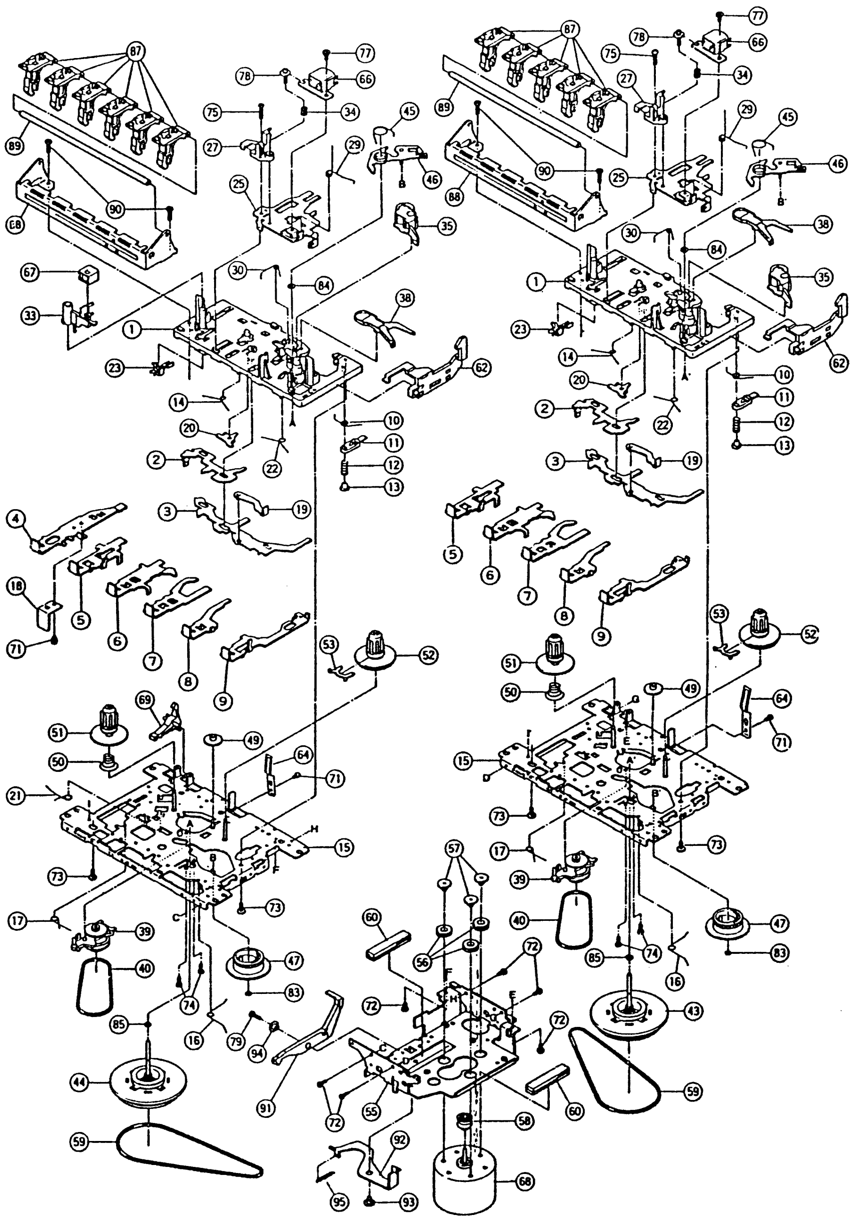
CASSETTE DECK SECTION (TN-21 ZSW-590) : 14929-123-130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16. PARTS LIST

16-1. ELECTRICAL PARTS

ASS'Y MAIN PCB (19000-011-600)

LOCATION NO.	CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
RR30	11048-477-100	R-METAL OXIDE	RS1T 10-J MINI TYPE	1	
RR17	11048-477-222	R-METAL OXIDE	RS1T 2.2K-J MINI TYPE	1	
AR4L, AR4R	11048-477-821	R-METAL OXIDE	RS1T 820-J MINI TYPE	2	
RR4	11048-577-821	R-METAL OXIDE	RS2T 820-J MINI TYPE	1	
JSVR1	11249-112-010	SEMI-VR	RH0615C 100 222	1	
IC5	11509-452-080	C-POLYSTYRENE	CQ 09 S 50V 360-J	1	
IC2	11509-452-120	C-POLYSTYRENE	CQ09 S 50V 470-J	1	
RC8	11609-402-140	C-ELECTROLYTIC	CE04W 35V 1000M	1	
RC6	11609-401-510	C-ELECTROLYTIC	CE04W 16V 1000M	1	
RC5	11608-106-101	C-ELECTROLYTIC	TAP 50V 100M 8 x 11.5	1	
RC4	11609-106-332	C-ELECTROLYTIC	CE04W 50V 3300M	1	
P/T	12869-220-100	TRANS-POWER	66 x 30 VIP690/670 4P	1	120/220/240
P/T	12869-220-200	TRANS-POWER	66 x 30 VIP690/670 5P	1	110/115/220/230
P/CORD	13059-808-246	POWER CORD ASS'Y	KKP-4 19C/B-161 W/S 220M/M	1	
P/CORD	13053-505-010	AC-WIRE	BS6500 GTBS 2.5M STOPPER 220M/M	1	
P/CORD	13059-808-301	POWER CORD ASS'Y	KKP-8WSPT-2 7FT 270M/M W/S	1	
P/CORD	13053-806-313	POWER CORD ASS'Y	KKP-10 SPT-1 #18 7FT 220M/M W/S	1	
P/CORD	13059-808-211	POWER CORD AC	KP-560LTSA-2F 200MM W/STOPPER	1	
RC8, AC6R, AC6L	11609-401-720	C-ELECTROLYYTIC	CE04W 25V 1000M	3	
ITC1, 2, 3, 4	11829-512-030	C-TRIMMER	TZ03R 20PF	4	
RIC1	12109-401-690	IC-REGULATOR	MC7812C	1	
JIC1	12109-401-810	IC-PRE/REC	TA8149N	1	
IIC1	12119-101-370	IC IF+MPX	TA8132N	1	
AIC1	12119-101-550	IC POWER	TA8216H	1	
PIC1, BIC1	12119-401-170	IC-OP AMP	MC4558C	2	
RQ2	12139-103-560	TRANSISTOR	KSA 614-O	1	
RQ7	12149-401-950	TRANSISTOR	KSD 882-Y	1	
RD1, 2, 3, 4, 9	12169-201-140	DIODE-RECT, 1N5392	1.5A 100V	5	
RZD1, 4	12169-403-910	DIODE-ZN	1W11.4-12.6V UZP-12B	2	
RZD2, IZD1	12169-404-110	DIODE-ZN	RD5.6FB/UZP-5.6B	2	
RZD4	12169-403-740	DIODE-ZN	IN12.4-14.1V UZP 13B	1	
ID1	12169-501-005	DIODE	KV 1236	1	
JL1R, 1L	12429-306-113	COIL-BIAS TRAP	FB895-85A	2	
IL5	12619-030-005	COIL-CAN	AC 450KHZ YEL	1	
IL3	12619-047-203	COIL-CAN	AD 110UH 796KHZ RED	1	
IL2	12619-411-000	MW ANT COIL	207BLRZ-K5026N-KR	1	
KL1	12619-573-071	COIL-CAN	AG 2.2MH F NON BLK	1	
KL2	12429-070-130	COIL-CHOCK	470UH R-TYPE	1	
AJK2	13303-500-610	TERMINAL-BOARD PUSH	4P PUSH TACK	1	
	13304-503-630	TERMINAL-ANT	ABS 2T+FM DITRON	1	

LOCATION NO.	CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
EJK1, AJK1	13339-113-020	JACK-HEADPHONE	HLJ2316-01-3040 12/9.5	2	
WJK1, 3	13339-403-020	JACK-AUX	8.3 PI PHOND TYPE	2	
P/T PRI	13349-131-050	CONNECTOR-WAFER	GT-PIN UL94V-1 5P	1	
CN10-2	13349-137-070	CONNECTOR-TRAP	MOLEX 2.5MM PITCH 5201 7P	1	
CN10-1	13349-137-080	CONNECTOR-TRAP	MOLEX 2.5MM PITCH 5201 8P	1	
CN3, 9	13349-137-040	CONNECTOR-TRAP	MOLEX 2.5MM PITCH 5201 4P	2	
CN11	13349-137-050	CONNECTOR-TRAP	MOLEX 2.5MM PITCH 5201 5P	1	
	13349-512-561	CONNECTOR-WAFER	STICK 5267-02A 2P-TYPE	1	
	13349-512-565	CONNECTOR-WAFER	STICK 5267-06A 6P-TYPE	1	
	13349-527-502	CONNECTOR-WAFER	STICK 5267-03A 3P	1	
JSW1 (BT CUT)	13519-930-220	SWITCH-SLIDE	00120050 1C-2P	1	
	13529-204-420	SWITCH PUSH	SPUY 42XRHOII	1	
HI-SPEED SLECTOR	13529-601-020	SW-PUSH	JFP13-21S	2	
FEP	14519-815-020	FM FRONT EBD PACK	FAF2-735H	1	
FCF1	14529-301-420	FILTER CERAMIC	SFE10.7MA5L-A	1	
ICF1	14529-304-610	FILTER CERAMIC	AHCM2-450BL	1	
ICF2	14529-601-040	DISCRIMINATE	CDA 10.7 MG18	1	
ICF3	14539-504-050	RESONATOR	CSB 456 F18	1	
PQ1, RQ3, 4, 1 , EQ1	12149-301-900	TRANSISTOR	KSC 945-Y, TAPE	5	
KR4, KQ5, 6, 7, 8	12149-301-930	TRANSISTOR	KSC1008-Y, TAPE	5	
IQ10, KQ9, 10	12159-301-330	TR-DIGITAL	KSR2003, TAPE	3	
IQ11, 12, RQ5	12159-301-780	TR DIGITAL	KSR 1003	3	
FQ2, IQ5	12159-301-810	TR DIGITAL	KSR 2007	2	
RD5, 6, 7, 8, 11, RD15 RD10, 12, 21, JD53, 54	12169-201-080	DIODE-RECTIFIER	1N 4001, TAPE	11	
ID6, 7, 9, 52, 53 JD40, 52, 61, 62, 63, 64 JD65, 66, 55, KD2 RD17, 13, 16, 19, 18 AD50, 51	12169-301-290	DIODE-SW	1SS53/1N4148, CT: 6PF	22	
	13013-517-510	PCB-MAIN	1VO 330 x 247 VIP690	1	
FQ1, IQ8, 9, 15	12149-301-820	TRANSISTOR	KSC1222-L, TAPE	4	
JQ1R, 1L, 3R, 4R, 50, 52 IQ13, 14 AQIR, 1L, 2L, 2R, 7, KQ1, 2, 13	12149-301-900	TRANSISTOR	KSC945-Y, TAPE	16	

ASS'Y FRONT PCB (19200-005-600)

LOCATION NO.	CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
ESVR2	11239-115-120	VR-SLIDE	RS20H 111W 50KB x 1	1	
ESVR1	11239-115-130	VR-SLIDE	RS20H 114W 50KW x 1	1	
LLDL7, LLDR7	12059-550-900	LAMP	PILOT FUSE TYPE PI4	2	
UIC1	12109-401-150	IC M/C DTS	LC7230-8250	1	
QIC2	12109-401-160	IC-E/C VR	LC7535	1	
UQ1, 2, QQ1, 2	12149-101-520	TRANSISTOR	KSA733-Y, TAPE	4	
QD1, 2, 3, UD1, 2, 3 UD4, 6, 12, 13	12169-301-290	DIODE-SW	1SS53/1N4148, CT: 6PF	10	
LLDL1, 2, 3, 4, 5 LLDL6, LLDR1, 2, 3, 4 LLDR5, 6, QLED1	12309-001-220	LED	SLV31VC TAPE	13	
USW1, 2, 3, 4, 5, 6, 7, USW8, 13 14, 15, 16, 17 DOWN, UP, USW18, 19	13559-901-100	TACT SWITCH	SKHVBE029A	17	
UD15, LD50	12169-201-080	DIODE-RECTIFIER	IN4001, TAPE	2	
LIC1	12119-201-940	IC-DISPLAY	KA2281 5DOT DUAL METER	1	
QIC3, 4, 1	12119-401-630	IC-DUAL OPAMP	MC4558S	3	
URE1	12199-101-080	REMOCON EYE	CD22R MESH	1	
ULED1, QLED2, 3	12309-001-220	LED	SLV31VC TAPE	3	
LCD1	12339-104-610	LCD DTS	SLA120-026B/LE0605BP	1	
QSVR7	13509-201-350	VOLUME SWITCH	SRBJ13	1	
QSVR6(SUR)	13529-203-930	SWITCH-PUSH	SPEA TYPE 2C-2P	1	
UX1	14539-003-010	CRYSTAL-UNIT	HC18-U4.5MHZ	1	
BLOCK EQ	14579-500-210	EQ BLOCK	RS20Z50HW OOA 53B	1	
	13013-517-610	PCB-FRONT	1V0 330 x 197 VIP690	1	

ASS'Y DECK (19680-010-010)

NO.	CODE NO.	DESCRIPTION	SPECIFICATION		REMARK
ASS'Y DECK	13029-430-130	CONNECTOR-WIRE	5264-03 2970#33 300MM	1	
ASS'Y DECK	13029-447-125	CONNECTOR-WIRE	5264-04 1007#26 250M/M	1	
ASS'Y DECK	13029-460-130	CONNECTOR-WIRE	5264-06 2970#33 300	1	
ASS'Y DECK	13029-467-130	CONNECTOR-WIRE	5264-06 1007#26 300M/M	1	

16-2. MECHANICAL PARTS

NO.	CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1	16000-530-710	CABINET-FRONT, 690	HIPS BLK (VIP690)	1	
2	17642-528-810	DOOR-CASS, A	ABS 94HB BLK (VIP670/690)	1	
3	17642-528-910	DOOR-CASS, B	ABS 94HB BLK (VIP670/690)	1	
4	16000-530-810	CABINET-BOTTOM	HIPS 94HB BLK (VIP670/690)	1	
5	16001-610-210	CABINET-SIDE	HIPS 94HB BLK (VIP670/690)	2	
6	16472-500-110	COVER-REAR	H-BOARD 3.0t (VIP670/690)	1	
7	16033-505-510	COVER-T/T	HIPS 94HB BLK (VIP670/690)	1	
8	17624-622-610	KNOB-TUNER, 690	ABS 94HB BLK (VIP690)	1	
9	17624-622-710	KNOB-VOLUME, 690	ABS 94HB BLK (VIP690)	1	
10	17624-622-410	KNOB-POWER, 690	ABS 94HB BLK (VIP690)	1	
11	17623-578-810	KNOB-MEMORY, 690	ABS 94HB BLK (VIP690)	1	
12	17623-579-010	KNOB-BAND, 690	ABS 94HB BLK (VIP690)	1	
13	17624-622-910	KNOB-SURROUND	ABS 94HB BLK (VIP670/690)	1	
14	17624-623-110	KNOB-H/SPEED	ABS 94HB BLK (VIP670/690)	2	
15	17624-622-810	KNOB-FUNCTION	ABS 94HB BLK (VIP670/690)	4	
16	17623-579-320	KNOB-CASS, PAUSE	ABS 94HB BLK (VIP670/690)	2	
17	17623-578-920	KNOB-CASS, ST/EJ	ABS 94HB BLK (VIP670/690)	2	
18	17623-578-910	KNOB-CASS, F.F	ABS 94HB BLK (VIP670/690)	2	
19	17623-579-310	KNOB-CASS, REW	ABS 94HB BLK (VIP670/690)	2	
20	17623-579-110	KNOB-CASS, L	ABS 94HB BLK (VIP670/690)	1	
21	17623-579-220	KNOB-CASS, PLAY	ABS 94HB BLK (VIP670/690)	1	
22	17623-579-210	KNOB-CASS, REC	ABS 94HB BLK (VIP670/690)	1	
23	16603-508-810	HOLDER-LCD	ABS BLK SCM6100	1	
24	16604-526-110	HOLDER-LED	P.O.M NTR VIP690	3	
25	16603-510-710	HOLDER-DISPLAY, 690	ABS WHT VIP690	1	
26	17653-536-410	WINDOW-LED, 690	PC 0.5T (VIP690)	1	
27	17653-536-210	WINDOW-DISPLAY, 690	ACRYL 2.0T (VIP690)	1	
28	17654-560-810	WINDOW-DOOR, A/B	PVC 1.0T (VIP670/690)	2	
29	17654-560-910	WINDOW-LCD, 690	PVC 1.0T (VIP690)	1	
30	17653-536-310	WINDOW-SCALE	PVC 1.0T (VIP670/690)	1	
31	15123-504-010	DAMPER-GEAR ASS'Y	ACETAL VIP690	2	
32	16174-503-710	CUSHION-FOOT	RUBBER BLK 2.5T (VIP670/690)	2	
33	16624-571-610	BRKT-PCB	SBHG 1.0T (VIP670/690)	3	
34	16674-571-810	SPRING-DOOR	STS # 27 PI1.0 (VIP670/690)	2	
35	18014-504-110	LENS-VOL, 690	ACRYL MILKY (VIP690)	2	
36	15683-506-010	HEAT-SINK, ASSY	AL (VIP670/690 TYPE)	1	
37	15684-507-610	HEAT-SINK	EXTR AL WHT	1	
38	18153-505-010	LABEL-RATING	PE 0.3T (VIP690L/AMF)	1	
39	18114-538-590	STICKER-REFLECTOR	FASROLL S-266 SIL V/H-LINE	2	
40	16033-505-610	COVER-VOLTAGE	ABS BLK (VIP670/690)	1	
41	17458-230-101	SCREW-TAP, TITE BH	2S-3 x 10 FE FZY	48	
42	17458-230-141	SCREW-TAP, TITE BH	B-3 x 14 FZY	2	
43	17558-230-101	SCREW-TAP, TITE SPEC	2S-3 x 10 FZY	2	
44	17428-240-123	SCREW-TAP, TITE TH	T-4 x 12 FZB	4	

DECK ASS'Y (TN-21 ZSW-590. 14929-123-130)

LOCATION NO.	CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
	14929-123-130	DECK ASS'Y			
11	10000-268-011	PAUSE LEVER	1821-14-55	2	
13	10000-268-013	PAUSE STOPPER	1921-14-11	2	
23	10000-268-023	LEAF SWITCH	MSW-1541T, 6401-01-149	2	
33	10000-268-033	MG ARM	1921-03-05	1	
35	10000-268-035	PINCH ROLLER ARM ASS'Y	1921-04-301	2	
38	10000-268-038	SENSING LEVER	1921-26-04	2	
39	10000-268-039	RF CLUTCH ASS'Y	1921-07-302	2	
40	10000-268-040	RF BELT	1921-07-03	2	
43	10000-268-043	FLYWHEEL ASS'Y	1921-09-304	1	
44	10000-268-044	FLYWHEEL ASS'Y	1921-09-303	1	
47	10000-268-047	CAM GEAR	1921-26-02	2	
49	10000-268-049	FF GEAR	1821-10-70	2	
51	10000-268-051	SUPPLY REEL ASS'Y	1921-05-304	2	
52	10000-268-052	TAKE UP REEL ASS'Y	1921-05-303	2	
53	10000-268-053	SENSER	1921-05-06	2	
58	10000-268-058	MOTOR PULLEY	1921-12-13	1	
59	10000-268-059	MAIN BELT	1821-12-22	2	
62	10000-268-062	EJECT SLIDE LEVER	1921-13-02	2	
64	10000-268-064	PACK SPRING	1821-10-93	2	
66	10000-521-010	R/P HEAD	HY424520K	2	
67	10000-542-002	E HEAD	PHK380-MSI 6A	1	
68	10000-502-020	MOTOR	EG530YD 2B	1	
69	10000-268-069	RECORD SAFETY LEVER	1821-10-69	1	
87	10000-268-087	OPERATION LEVER	1821-31-07	11	

TURN TABLE ASS'Y (JP-981PC: 15029-506-110)

LOCATION NO.	CODE NO.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
1	10000-452-001	CABINET	PM11020 M13000TV	1	
2	10000-452-002	CUSHION-DUST COVER	PP40391, SBR	1	
3	10000-452-003	LOCKER-ARM	PM40230, ACETAL	1	
4	10000-452-004	HINGE-ASS'Y	PA40092	2	
5	10000-452-005	DUST-COVER	PM20372 GP165	1	
6	10000-452-006	PLATE-CLUTCH	PM40211, ACETAL	1	
7	10000-452-007	GUIDE-CLUTCH	PM40221, ACETAL	1	
8	10000-452-008	LINK-ACTUATING	PZ40171, STS	1	
9	10000-452-009	SPRING-ADJUST	PZ40162, STS	1	
10	10000-452-010	LEVER-SWITCH	PM40051, ACETAL	1	
12	10000-452-012	CARTRIDGE	CD-405-30	1	
14	10000-452-014	TONE-ARM	PM20101, ABS	1	
15	10000-452-015	FEED-ARM	PM30151, ACETAL	1	
16	10000-452-016	MOTOR	SHR2R	1	
17	10000-452-017	PULLEY-MOTOR	PL40170	1	
19	10000-452-019	LEAF-SWITCH	SLS-1123A3-1	1	
21	10000-452-021	EP ADAPTER	PM40030, ABS	1	
22	10000-452-022	SPACER	PI7.2 x PI15 x 0.5PE	1	
23	10000-452-023	BELT	PP4029, CR-WRT	1	
24	10000-452-024	PLATER	PM2040, M13000TV	1	
25	10000-452-025	E-RING	E-6	1	
26	10000-452-026	CONNECTOR-5P	SC25-05HG	1	

* IT IS IMPOSSIBLE TO SERVICE EXCEPT BEING REPLACED BY ONLY ABOVE ITEM.